

November 1957

Vol. 261

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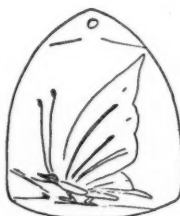


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PETER ZODAC, Editor and Publisher
America's Oldest and Most Versatile
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ogist, Lapidary.

Published Bi-Monthly

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CHIPS FROM THE QUARRY

Merry Christmas and a Happy New Year

to all subscribers, advertisers, and friends

May good health and good fortune join forces to watch over each and every one of you during every day of 1958, and in addition may our dear Lord shower down His choicest Blessings on all of you.

The Editor

JAMES H. BENN RETIRED

Mr. James H. Benn retired on August 15 after 33 years of service with the Smithsonian Institution, Washington, D.C. Mr. Benn began his long career with the U. S. National Museum in 1924 as a scientific helper in the Department of Geology, and worked his way through the ranks to the position of Museum Geologist.

Mr. Benn's chief responsibilities were with the mineral and gem collections. He was especially gifted in working with young people, and had a large following of boys and girls who brought their rocks to him for identification. He gave

frequent lectures to civic groups on rocks, minerals, and gems, and appeared on many radio and television programs dealing with these subjects.

Mr. Benn is a past president of the Mineralogical Society of the District of Columbia and the Eastern Federation of Mineralogical and Lapidary Societies.

We regret to report that Mr. Benn was forced to retire because of ill health. However, he is recuperating rapidly, and we wish him many years of happiness at his beloved Edisto Island, where he expects to go as soon as his health will permit.

George Switzer

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF ROCKS AND MINERALS published BI-MONTHLY at PEEKSKILL, N. Y., for OCTOBER 1, 1957.

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PETER ZODAC

Sworn to and subscribed before me this 1st day of October, 1957. (My commission expires March 30, 1959.)

ROSE McCAFFREY

PETRIFACTS AND MINERALS

from

Oil-schist-mine at Messel near Darmstadt, Hessen, Germany

by

Dr. Werner Lieber, Dantestr. 50, Heidelberg, Germany—and—

SFC William J. Malarkey Jr., P.I.O., Berchtes garden Rec. Area, APO 108, New York, N. Y.

At Messel, Germany—located a very few miles Northeast of Darmstadt or about 15 miles South of Frankfurt—is a large oil refinery that depends on a so-called oil schist rather than liquid oil pools to keep it in operation.

The locality, well known for its large number of petrifacts, is the only place in the world where a rare mineral "Messelite"—after the village of Messel—occurs.

On the 17th of November 1956, the co-authors of this article—both members of the Rocks & Minerals Association—visited this refinery and want the readers of R&M to follow them on a short trip to the locality.

A strong odor of petroleum blankets the area as you walk through a maze of buildings apropos to such an operation, and suddenly you find that you're on the brink of a mammoth dish-like hole in the ground. We were surprised when we found its dimensions to be 1,000 meters long and 700 meters wide. Our guide informed us that from here on smoking was forbidden. A well-worn path led us down the terraced sides of the open mine—or quarry if you prefer—until we reached the bottom.

Here we stood in wonder, back 50 to 60 millions of years in time when actually this hole had apparently been a



Fig. 1

Reconstruction of how the Messel area looked some 50-60 millions of years ago

beautiful sweetwater lake about 500 feet deep.

It was during this—the Eocene—period that the lake was born; a basin resulting from fractures in the earth's surface subsequently filled with water. There was a rich fauna and flora, both in and around the lake; usually such inland lakes contain no appreciable amount of ground oxygen. Under these conditions a mighty sediment of clay with countless inclusions of dead fishes, other animals and different plants came into existence. The cadavers rotted, their relics included and out of the mud with its organic substances came oil which was made up during thousands and millions of years. In time, more and more sediment accumulated covering older layers. During this process the deepest layers became solid and the lake grew shallower by leaps and bounds. Ultimately it dried out and the surface was again covered, this time with sands, and plants and trees began to grow.

Let's take a step into the present time—in 1884, near the village of Messel, men discovered that oil could be produced through distillation from this coal-like schist. It was thus that the present refinery was born. Mining operations have been continuous to this day; they still are going full blast. Geological investigations show a cross section of the locality to look like drawing number—

2. According to the profile and competent authority there is enough raw material to keep the mine going for another 100 years. It may be interesting to note here that Germany produces natural liquid oil aside from this oil schist and does also import a certain amount of oil.

The oil schist is a fragile, bituminous schist-coal of black-gray color. It contains about 40 percent water, 35 percent ash and about 7 to 8 percent oil. Explosives are not used in the mining process since the material is very soft and can be extracted by using dredging machines and shovels. Walking on the floor of the basin is like walking on a very thick carpet; however it gets to be slick under the foot.

Experience has shown that the heavy type machinery must be kept an appreciable distance away from the edge of the terraces; they crumble easily under weight and machines have in the past tumbled over.

Another highly interesting thing is the way small mining cars are moved from one place to another. Great loops of chains—some, hundreds of feet long—encompass two terminal points employing large hoisting type wheels, in an endless beltline fashion. The heavy links engage a V type notch in a thick metal plate which is attached to the top and one end of each car and carries them along the track. The cars are the sole means

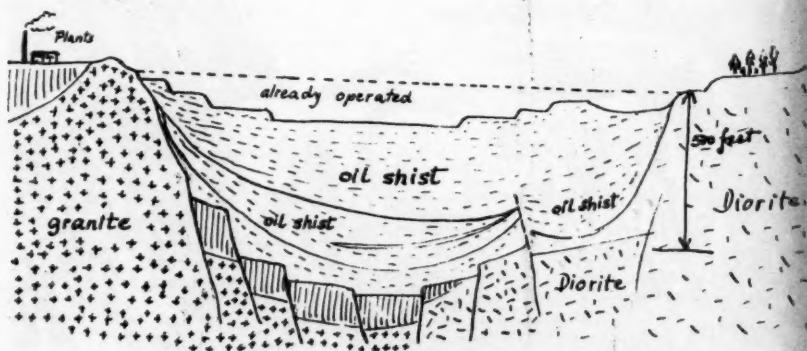


Fig. 2
Profile of the open mine at Messel

of supporting the chains between the terminal points. One side of the horizontal loop carries cars in one direction while the other side carries them in another. The cars are easily detoured from one track to another simply because the terminal points are elevated above the sagging chain line. When a car approaches a terminal point the chain is raised from the V notch and the car is free to travel along on its own momentum until it engages another chain over another track, going to a different part of the mine. Incidentally the cars are not coupled together and the chain is driven continuously. Although the chains do break now and then they present no great problem.

In consequence to the origin of the location, one can find many fossils and petrifacts in the schist. Fishes, along with plants are the most abundant.

Fig. 4 shows a part of "*Lepidosteus trausi*" which has a size of about 14 inches. This species is very rare to find

in present times. Only in the Mississippi area are they known today. Other animals such as frogs, snakes, crocodiles and turtles are also found here as petrifacts. It is remarkable to note that one species of the crocodile petrifacts known as "*Hassicosuchus*" is the very same species that was discovered in the Bridger Eocene in the state of Wyoming.

Among the animals that lived on the land near the water were insects, birds, and different mammals such as the ancient horse "*Propalaeotherium*" which was as big as a deer, and the horse "*Lophiotherium*" (Fig. 5) which had attained a size of about 15 inches in height. Different kinds of bats have been found as well as total petrifacts of the rodent "*Airulavus macrurus*." These were discovered and described in 1949. The rodents—including the tail—attained a size of about 20 inches. (See photo on front cover.)

As for minerals; the location is very poor. Sometimes one can find pyrite,



Fig. 3

View showing how cars are carried along during mining operations in Messel

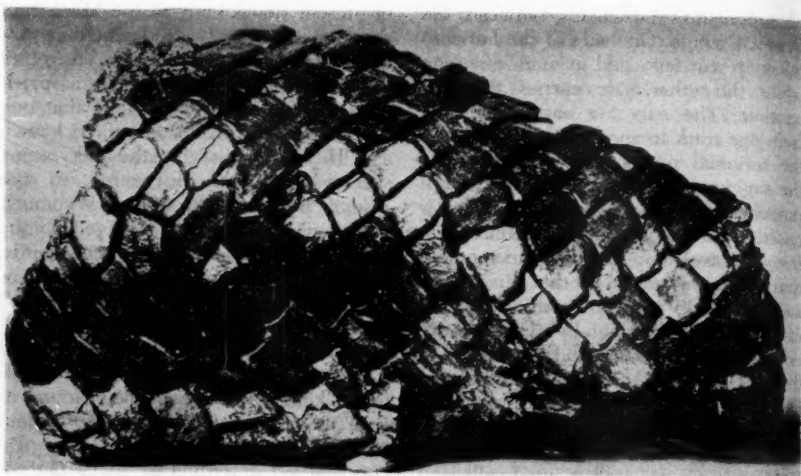


Fig. 4
Part of fish "*Lepidosteus trausti*" which had a total length of about 14 inches

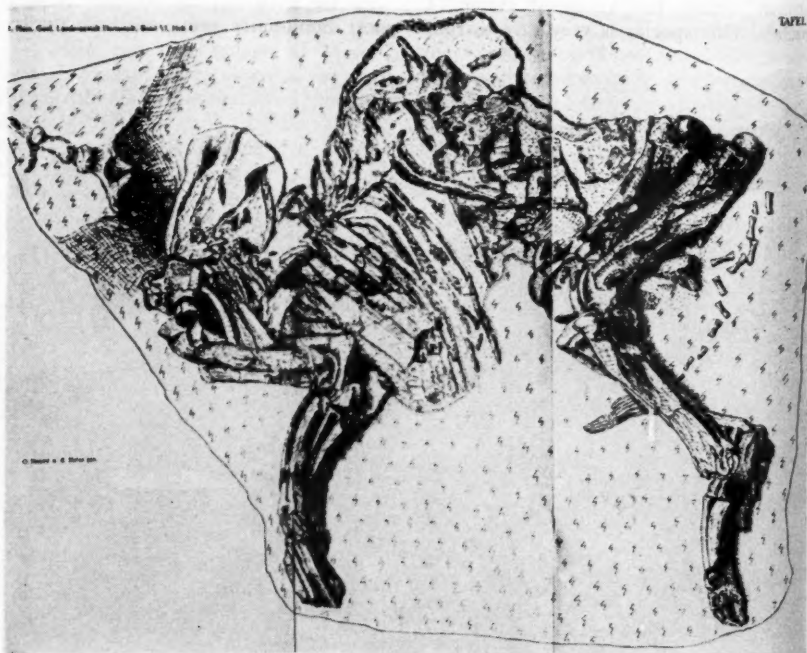


Fig. 5
Ancient horse, called "*Lophiotherium messelense* Haupt." Nat. size about 10-15 inches in height (like a fox)

marcasite and selenite. However, the most interesting is the rare mineral known as "Messelite." It is found included in a few layers of the schist. The chemical composition is $(\text{Ca,Fe})_3(\text{PO}_4)_2$ plus $2.5\text{H}_2\text{O}$. The triclinic crystals are mostly radial aggregates, sometimes as singles, and they range in size from 2 to 4 millimeters. While some specimens contain an abundance in crystals others are practically void of them. This local-

ity is the only known place in the world where Messelite has been found. Since the mineral occurs sparsely in only a few layers of the schist, it is hard to ascertain just how long one may be able to look for and find the crystals. Perhaps they will find another layer containing this rare mineral as the mine develops and—maybe—this is the one, only and last. Who knows?

COLLECTING IN MICHIGAN AND MINNESOTA

By Lyle DeRusha, RR 4, Chippewa Falls, Wisc.

After quite some research on Michigan minerals and collecting areas we felt ready to venture on another collecting trip to gather specimens. We started with the old mines at Norway and Vulcan, Michigan, near the Wisconsin border. We arrived at Norway early Sat., June 29th, after camping overnight at the village of Armstrong Creek. The weather was nice and cool for climbing over the mine dumps.

Most of the rock piles in this area are overgrown with brush and weeds making it difficult to find anything worthwhile, except where the highway crews use materials from the dumps for road work. However a couple of good pieces of hematite and a nice cluster of barite crystals were found. At Iron Mountain it is much the same... too overgrown.

Just north of Iron Mountain we took highway 69 stopping at Randville where there is located a marble quarry. Here we found lovely specimens of white satiny prisms of tremolite. Twelve miles east of Randville is located the village of Felch. At the dolomite quarry a mile or so east we found good crystals of light green actinolite. Here one must get permission from the operator who lives nearby to collect, as they do considerable blasting.

Back on highway 95 we continued to Republic. Here a new open pit mine is in operation. Although the mine was shut down due to vacations, we found after

considerable digging two good specimens of pyrolusite. Specular hematite is quite abundant on the dumps.

Continuing on 95 to the junction with highway 41 we turned right and soon arrived at Ishpeming. Here and at Negaunee are located the Cleveland Cliffs Mining Co. pits. Again no one was working due to vacation. From the no trespassing signs it's quite evident they discourage rock collecting at the mines. We did look over a few small dumps and came up with a nice piece of green talc. At Negaunee from Jasper Hill we took several pieces of jaspilite, a deep red rock banded with specular hematite, that should produce a good polish.

Turning west we arrived at Champion where the Champion Mine is located just outside the village. This mine is operated by the South Range Mining Co. Here collectors are still permitted to browse around the rock piles taking a sample here and there. The ore from this mine is very high grade specular hematite containing between 60-70% iron. Its very brilliant micaceous structure makes it a very attractive specimen. With little effort black tourmaline crystals in hematite are found. Garnets which are supposed to be quite common on the dumps were conspicuous by their absence. We did find a few and a couple of nice siderite specimens. At Michigamme farther down #41 on the old mine dump garnets were also supposed to be abundant. Here they are in a soft

green chlorite, and scarce as hen's teeth. In this chlorite schist are small crystals of martite.

Continuing on #41 along the shore of Keweenaw Bay we started to look for agates on the many beaches between L'Anse and Houghton. They are kept quite clean by the many collectors along the way.

Near Houghton at Atlantic Mine on the old Huron Mine dump several good copper nuggets were picked up. The Isle Royale Mine dumps are being reworked now and nice nuggets of mass copper are found. An unusual specimen was found containing a dark grey background with white calcite on dark green epidote xls with a dab of pink laumontite in the center making a flower effect. It is very attractive. At the Baltic No. 2, copper nuggets and wire copper in calcite are found. Chalcocite in veins about an inch thick is quite common in this dump. Algodonite in veins about an inch thick sandwiched in quartz is also found here. Continuing on #41 north we stopped at the Centennial Mine at Kearsarge operated by Calumet-Hecla. This company discourages collecting on their dumps so one has to be satisfied with the old abandoned ones. On the old Allouez dumps near the village of Allouez, chrysocolla is very common. A turquoise-blue to a deep blue disseminated in dark red conglomerate makes this a colorful specimen. Here we found small red crystals of analcite filling small cavities in rock.

A side trip for agates is in order at this point. Taking the road west from Allouez 6 miles to Cedar Beach, limonite colored agates are found. Going west from the village of Ahmeek to 5 mile point is another good place to hunt. Farther down the lake at 7 mile point altho harder to get there is a much better place because of its inaccessible location.

Our next mineral location on the list was the ghost town of Delaware. Here on the dumps of the old Delaware Mine is datolite, the pink variety. After spending a couple of hours hunting and not finding a single piece we inquired and

found the dump had been worked and reworked to a depth of six feet. So no datolite. Rock shops in the vicinity had very nice specimens for sale at a reasonable price.

From Copper City we started back on highway 26 along the shores of Lake Superior checking the beaches for agates. They are scarce along here due to heavy tourist collecting.

Farther east and south of Ontonagon a few miles, the White Pine Mine is located. We thought we would find chalcopyrite, but it turned out to be copper disseminated in a dark basaltic rock. Again the high fence with no visiting signs. From the guard we received a piece of ore he was using as a door stop.

On our way again we drove to Ironwood but didn't stop to collect on the dumps. Continuing into Wisconsin we stopped for a day on one of my favorite trout streams. In Iron county there are many good trout streams along with iron mines.

COLLECTING IN MINNESOTA

After a good trout feed we drove across the northern counties of Wisconsin and headed for Crosby, Minnesota, a hundred miles southwest of Duluth. Here we collected in earnest. The principal attraction here is BINGHAMITE and GROUTITE. They are quite rare minerals found only on the Cuyuna Range. I don't believe they are listed in Dana's.

Binghamite is a bright red mineral that appears to be a silicate of iron. It is chatoyant, having a luster and appearance of velvety mahogany.

We arrived in Crosby the center of mining activity in this area Saturday evening. We got the camp set up and went to bed early in order to get an early start the next morning before going to church. Inquiring at a local motel we were told that these minerals are usually found on the No. 2 dump of the Hanna Co. mines. In the morning we took off for the mine going by a sketch the motel man gave us. We spent a couple of hours going over the dump that produced nothing. Altho we found small magnetite crystals lining small cavities in quartz,

minated smoky quartz crystals, and pink quartz crystals, no binghamite was found. Just as we were ready to give up as a bad job, a mine guard drove up to request us to leave. Upon discussing the reason for the companies attitude, it seems collectors made a general nuisance of themselves. The dumps are high with large boulders lying loosely on them ready to roll with just a gentle nudge. The pits are a couple of hundred feet deep with much rock that can easily come clattering down on some unwary person. It's just too dangerous to leave the general public in. He stated that no binghamite or silkstone has come out of the pit in the last year but on an old abandoned dump east of town we might find some small pieces and chips that were overlooked by previous collectors. Later on he drove up to see how we were doing, brought us a piece for a sample. He also gave us the name of a collector we should see. Sure enough here and there we found small pieces we put in the bag for safe keeping. There seemed to be much more silkstone than binghamite and we found several good specimens of cabinet size. Silkstone is very much like binghamite having a yellow limonite coloration instead of hematite as has binghamite.

Our search for groutite was a failure until we visited the collector the guard referred us to. After introducing ourselves we got down to the business of rock collecting and had a very delightful time. He is an accomplished cutter and has a very beautiful collection of stones. We went over his superb collection of cabinet minerals then to his stockpile where he picked out a first class specimen of both binghamite and silkstone and presented them to us. Then out of his special stock he gave us a good sized specimen of groutite, the one thing we tried so hard to find and didn't.

Groutite is a new mineral, named after F. F. Grout of the U. of Minnesota. It's of the diasporo-geothite group, HMnO_2 , color, luster, ect. is quite like manganite. Its crystal and cleavage are different. It

is of the orthorhombic dipyramidal class. Streak is brown and S.G. of 4.14.

Loading him down with specimens we collected in Michigan we left Crosby for Little Falls and Royalton to collect staurolites. Here we found the Mississippi River ready to leave its banks because of recent rains at the headwaters. So staurolite collecting was out of the question. From the bank near the dam we took a couple pieces of mica schist with staurolites in it and headed toward Wisconsin and home. Checking road cuts and gravel pits on the way produced some nice banded agates to add to our already heavy load of minerals we had picked up.

Now back home after collecting some twenty odd minerals one just wonders how many we overlooked. From the standpoint of variety the trip was a huge success, additions to our growing collection and some trading material also.

Information Wanted

Wonder if you have any suggestions on how to open a concretion of about 20" long and 15" across weighing over 60 lbs., without fracturing. There may be a worth while fossil in it.

J. E. Schmidt
R.D. Box 249
Schwenksville, Pa.

If the concretion is a soft one, perhaps you could cut it in two with an ordinary saw (use an old one), or a long hack saw.

If the concretion is a hard one, then try to open it as if it were a geode. The following method, used by Clyde D. Allan, appeared in June 1932, *R&M*, p. 73:

"In breaking open geodes, I have found a sand box to be a very useful article. After placing a quantity of sand in a box of suitable size, moisten it. Place the geode on the sand, pushing it in a little, and revolve it, hitting sharp blows with a mineral hammer. When a complete circuit has been made, give the geode a very hard blow and it will break neatly along the tapped line."

If readers have any other suggestions, we would like to hear of them.



WORLD NEWS ON Mineral Occurrences

ITEMS ON NEW FINDS ARE DESIRED
PLEASE SEND THEM IN.

Abbreviations: xl=crystal
xld=crystallized

fl=fluoresces
ph=phosphoresces

xline=crystalline

ALABAMA—"I have excellent specimens of black tourmaline in quartzite, found in an old roadbed in Lee County, Alabama, about 10 miles north of Auburn, on Highway 147."—note from James Miller Davis, 212 Guaranty Savings Bldg., Montgomery, Ala.

ARIZONA—"For a long time I have been putting aside a variety of things that have been gathered on our field trips or family camping trips. Some of them are things that I do not know while others are just pieces that I thought might interest you because you collect sands and micromounts which I do not. So far our family is interested in only mineral specimens and oddities, not cutting materials."—letter dated March 29, 1957, from Mrs. Irene Barber, Rt. 9, Box 907, Tucson, Ariz.

A beautiful bluish-green mass of chrysocolla from the Coyote Mts. of Pima Co., Ariz., was one specimen received from Mrs. Barber.

ARKANSAS—The following item, dated March 24, 1957, was sent in by Byron C. Marshall, 204 Central Ave., Hot Springs National Park, Ark.

"Within the last few weeks, a silky, white, fibrous mineral was brought out of an old tunnel, about 600 feet down, at the barite mines at Magnet Cove, Hot Spring County, Arkansas.

"A sample was sent to the Smithsonian Institution, U.S. National Museum, and Dr. George Switzer identified it as pickeringite. After looking through

the literature, I find this to be not only a new record for Magnet Cove, but also for Arkansas."

"Pickeringite is a hydrous magnesium aluminum sulfate, and a member of the alum group. Dr. Switzer states that it is sometimes called magnesia alum. I found it only listed from two U.S. localities in what mineral books I have, and that is Tumucari, Quay Co., New Mexico, and Colorado City, Colorado."

CALIFORNIA—"At Fort Point, directly under the Golden Gate Bridge, in San Francisco (San Francisco Co.), Calif., I have found pectolite, previously reported in Bureau of Mines Journals, but this pectolite is sometimes vividly fluorescent. There is a larger concentration of pectolite on Eakles Beach, about ¼ mile south. This might be a good item for World News"—letter dated May 3, 1957, from Galen A. Rowell, 1061 Miller Ave., Berkeley 8, Calif.

COLORADO—"Here in Ouray (Ouray Co.), the famous gold producer, the Camp Bird is reviving after being semi-dormant for 30 years. They will also work the Yellow Rose vein in which, according to an old report, native silver in rhodochrosite was found. Here's hoping."—letter dated March 3, 1957, from Pat Fancher, Ouray, Colo.

CONNECTICUT—Some few months ago we received a nice specimen—green fluorite xl mass in a cavity in pegmatite. The specimen was sent in by

Wm. H. Robbins, RFD 1, Hampton, Conn.

"From vein 4 inches thick in ledge at Willimantic (Windham Co.), Conn."—on label.

DELAWARE—Bob and Hazel Reynolds, 470 Stocksdales Rd., RD 2, Glenarm, Md., sent in a number of pebbles which they collected on the beaches of Delaware. From South Bowers Beach, Kent Co., Del., a nice specimen was a dark gray chert pebble.

FLORIDA — From Southeastern Mineral Co., Box 2234, Lakeland, Fla., we have received some very fine petrified shark's teeth, grayish in color.

"From Bone Valley Formation at the Peace Valley Mine, south of Bartow (Polk Co.), Fla."—on label.

GEORGIA — "Slender hexagonal apatite prisms occur in the Appalachian Minerals Company quarry near Monticello (Jasper Co., Ga.), according to Mr. G. E. Webster of Macon. The crystals are as much as 1 cm. long and 4 mm in diameter, but they can be easily overlooked, as they are colorless and scattered at random through light-colored gneiss." — Mineralogical notes by Vernon J. Hurst, Georgia Mineral Newsletter, Autumn 1956, p. 90 (Published by the Georgia Geological Survey, 19 Hunter St., Atlanta, Ga.—A. S. Furcron, Editor).

IDAHO—Fine groups of colorless, tabular angelite xls have been found in the lead mines at Kellogg, Shoshone Co., Idaho.

ILLINOIS—"I am enclosing a specimen of Iceland spar (calcite) I found along the Illinois River about 4 miles southwest of Griggsville (Pike Co.), Ill."—letter dated April 23, 1957, from Richard D. Armstrong, 1036 N. 33rd St., Decatur, Ill.

Though small, the specimen is a colorless little cleavage showing double refraction. A calcite which shows double refraction is called an Iceland spar,

because this type was first found in Iceland.

INDIANA—From Meshburger quarry near Columbus, Bartholomew Co., Ind., we have two specimens that were sent in recently by Leroy H. Grossman, 211 N. Park Ave., Batesville, Ind.

One specimen is a beauty—a loose, golden-brown doubly terminated calcite xl, $3\frac{1}{2}$ " long by $1\frac{1}{2}$ " wide. The other consists of small, lustrous, tarnished blue and golden marcasite xls on dark gray limestone.

IOWA—Michael Papcun, RR 1, Melrose, Iowa, has sent in a dolomite specimen, white, xled with calcite xls and both on dark gray limestone.

"Found in cavity of dark gray limestone at a coal strip mine, about 5 miles southwest of Monroe, Marion Co., Iowa."—on label.

KANSAS—Walter Brannan, Idana, Clay Co., Kans., has sent in an olive-gray chert which he found in Idana. We hope he finds many more interesting specimens in his area.

KENTUCKY—Sfc. William J. Malarkey, now with the armed forces in Europe, was stationed for many months at Fort Knox, Hardin Co., Ky. A note from him, recently received, reads:

"Within and around the Fort Knox Reservation, Hardin Co., are many limestone caves. The caves contain very nice specimens of stalactites and stalagmites, small ones for nice size display."

LOUISIANA—Black basanite (quartz) pebbles have been found in a huge gravel pit near Monroe, Ouachita Parish, La., by Bill Hurley, P.O. Box 2673, Monroe, La.

Basanite is also called touchstone because it was used for testing the color of the streak of metals.

MAINE—Gem quality dark green serpentine, on common green serpentine, have been found on Little Deer Isle, Hancock Co., Me.

MARYLAND—Near Clarksville, Howard Co., Md., smoky quartz xls have been found loose in soil in a field.

MASSACHUSETTS — Dark green masses of actinolite (amphibole) associated with greenish epidote (some in xls) and small brassy-yellow pyrite cubes in a matrix of whitish quartz, were found some months ago by Ernest H. Fisk, West Chesterfield, Mass.

"Found in a small brook in Worthington, Hampshire Co., Mass."—on label.

MICHIGAN—From Nashville, Barry Co., Mich., we have an attractive quartz-jasper conglomerate pebble that was sent in by Harry A. Laurent, Box 345, Nashville, Mich. The specimen consists of bright red jasper with smoky quartz.

MINNESOTA—"I am sending you a piece of crystalline rock knocked off Carlton Peak on the north shore of Lake Superior which is said in several places including a book by geologists, to be solid anorthosite. I cannot find this mineral in any mineralogy book. What is anorthosite?—letter dated May 4, 1957, from Leigh P. Jerrard, 522 Willow Road, Winnetka, Ill.

The specimen is a grayish mass consisting of colorless, glassy labradorite.

Anorthosite is a name given to granitoid rocks that consist almost entirely of labradorite (feldspar). The name comes from anorthose, the French word for plagioclase.

Carlton Peak in Cook County, Minn., a prominent locality for anorthosite, is about 1¼ miles N.W. of Tofte, a little town on Lake Superior.

MISSISSIPPI—Dark red jasper pebbles have been found in Bell Creek, Harrison Co., Miss., about 18 miles N.W. of Gulfport, by J. S. Locke, 39-48th St., Gulfport, Miss.

MISSOURI—"Here is a small item for Missouri's column 'World News on Mineral Occurrences.' A buddy of mine and myself have just discovered a lot

of fluorescent calcite near St. Louis, Mo. It occurs at a new road cut, where a limestone hill is being sliced for road-fill material. Most of the calcite is of the 'dogtooth' variety, some euhedral xls occurring. Some material is xline, mostly golden calcite.

"There occur also some very delicate xls in flower-like masses. There are unique, we think. These xls fluoresce white and cream colors. Some of the other xls fluoresce light green. The green color may be due to some impalpable sphalerite inclusions, as this and a little limonite are the only other minerals found in connection with this limestone. All xls occur as linings in pockets from 4 inches to two feet in diameter—like huge geodes."—letter dated March 26, 1957, from Geo. C. Dick, 9207 Argyle Ave., Overland 14, Mo.

MONTANA—"At the Jardine mine, several miles east of Gardiner (Park Co.), Mont.,—just bordering Yellowstone National Park—on one of the more than sixty-odd dumps, arsenopyrite crystals embedded in a silvery schist can be found. Best place to look is on piles near the adit below the old open cuts, on the west end of Mineral Hill. Specimens of schist are very abundant and make attractive specimens.

"Permission to hunt on the dumps should be secured first however from the caretaker of the mine who lives in one of the dwellings near the foot of Mineral hill. Mr. Onstolt is the caretaker.

"Also noted on the dumps in several spots were rough, reddish, rounded crystals of garnet embedded in schist.

"The Jardine mine, long a producer of gold, arsenic and tungsten (scheelite) has been inactive for about the past nine years."—letter dated May 8, 1957, from Gerald Navratil, Bonners Ferry Ranger Station, Box 119, Bonners Ferry, Idaho (home in Hastings on Hudson, N.Y.).

NEBRASKA — Amel Priest, Peru, Iowa, sent in a number of nice 2 inch geodes which he had collected in a

limestone quarry at Wymore, Gage Co., Nebr. The geode is lined with colorless calcite xls—xls either have a faint brownish tinge or are coated by brown limonite. Some of the calcite xls are rhombohedral, others are dogtoothed. The xls with a faint brownish tinge fl. yellow under the long wave.

NEVADA—In the last issue (July-Aug. 1957) of R&M, we printed a letter, dated April 25, 1957, from A/2c Lawrence E. Wright, 55 PMS, Box 119, Forbes AFB, Kansas. Mr. Forbes, whose home is in Carson City, Nev., sent in a number of items on minerals and mineral localities of his state. Here is his item No. 2:

"Carson City (Ormsby Co.), Nev. Quartz crystals of unusual purity (locally known as water quartz) can be found in a decomposing granite formation in a canyon one mile south-southwest of the Indian Colony south of Carson City."

(To be continued)

NEW HAMPSHIRE—Good xls of black magnetite have been found on a small hill near Jasper Mt., Berlin, Coos Co., N.H.

NEW JERSEY—World News on Mineral Occurrences is the most popular feature of R&M. We receive so many items for this column that now and then one of them gets 'lost' on us. A case in point is the following item, dated June 28, 1956, that was sent in by Herbert M. Payne, 1312 N. Limestone St., Springfield, Ohio. We apologize to Mr. Payne for this late appearance of his letter which was written in reference to a deposit of iron pipes in Mississippi (R&M), March-April 1956, p. 134). Mr. Payne's letter reads: "I read with interest the item in R&M and believe you might be interested in similar iron pipes as found in Monmouth County, New Jersey.

"These deposits are still in existence and have been used in recent years as fill in repairing extensive beach damage along the ocean shore at Long Branch,

N.J. The City Park Manager, or contractor involved in this work, would be a source of information as to the exact location of his source of material.

"The iron pipes and pieces of pipe are quite large. Sizes from a few inches in diameter to about eight or ten inches in diameter.

"It is understood that a number of years ago quite a flourishing smelting business existed for the extracting of iron from deposits in Monmouth County.

"I noticed that a remark was made to the effect that no other known deposit of natural iron pipe existed in this country, and for that reason I am writing of this deposit which might be investigated at some time by any collector."

NEW MEXICO—Masses of colorless acicular xls of calamine have been found in the Organ Mts., Dona Ana Co., N. Mexico.

NEW YORK—Harold J. Lienemann, Box 42, Gouverneur, N.Y., sent in the following item, dated, May 18, 1957:

"A small occurrence of jordanite has been found in the St. Joseph Lead Co. mine at Balmat, St. Lawrence Co., N.Y. The mineral occurs as lead-gray xls and was found in a vug."

NORTH CAROLINA—White and gray tremolite occurs in talc and chrysolite at Webster, Jackson Co., N.C.

NORTH DAKOTA—Lignite, a variety of coal, has been mined extensively near Lehigh, Stark Co., N.D. The lignite bed is from 10-15 feet thick.

OHIO—A black mass of basanite (quartz), stained brown by clay, was sent in recently by L. F. Grashel, 1702 Highland Ave., Portsmouth, Ohio.

"Found about 6 miles west of Portsmouth, (Scioto Co.), Ohio."—on label.

OKLAHOMA—Some dark brown limonite nodules have been received from Glen E. Kiser, Douglass, Kans.

"Found on H'wy 77, north of Orlando, Logan Co., Okla."—on label.

OREGON—Grayish, metallic pebbles of josephinite have been found in stream beds near Grants Pass, Josephine Co., Oregon.

PENNSYLVANIA — Howard B. Schanely, 49 E. Philadelphia Ave., Boyertown, Pa., sent in a specimen which he had collected at an old abandoned copper mine in Audubon, Montgomery Co., Penn.

This specimen is a micromount consisting of tiny dark blue linarite xls.

RHODE ISLAND—At Portsmouth, Newport Co., R.I., is an old abandoned anthracite coal mine. From this mine we have a lustrous black mass of graphitic anthracite that was sent in by Tim Moses, Bagy Wrinkle Cove, Warren, R.I.

SOUTH CAROLINA—Native gold in xled quartz has been found at the old abandoned Hammet gold mine, 3 miles southeast of Cowpens, Cherokee Co., S.C.

SOUTH DAKOTA—An anonymous subscriber sent in a nice $1\frac{1}{2} \times 2$ " pink pebble of rose quartz.

"Found at Fairburn, Custer Co., S.D."—on label.

TENNESSEE—The following item was sent in by Carl Seyfert, Jr., Box 1803, Vanderbilt University, Nashville, Tenn.

"In Nashville (Davidson Co.), Tenn., there is the Lynwood limestone quarry where you can find cephalopods (fossils) up to 2 feet long. Inside these cephalopods you can find celestite, both xls and fibrous (bluish, sometimes white), also fluorite x's (purple to white), dolomite xls (white), also calcite xls (white dogtooth spar)."

Please, Mr. Seyfert, send in some more items.

TEXAS—The following letter, dated July 8, 1957, comes from Fred Blackmar, Box 351, Luling, Texas.

"The fact that fine agate is present along the Rio Grande River, up-stream or down from Laredo (Webb Co.), Texas is not news to many, I am sure; but I thought that the details on a specific, easily reached locality would interest some.

"The location I wish to tell of is on Neff's farm about $2\frac{1}{2}$ miles north from downtown Laredo on Santa Maria Street. A dirt road turns left off Santa Maria at a tin barn and warehouse (which bears the sign: NEFF FARM) and runs to the edge of the river, where there is ample room to park.

"In general, the Rio Grande agate occurs both in the stream gravels themselves and on the hilltops, bordering the river. I have personally found agate as far upstream as Del Rio and downstream to Falcon Dam, though it covers a much greater area in all probability.

"The agate at Neff's farm occurs in the river-washed gravels along both sides of two islands in mid-stream. One can easily reach the lower island by following a good trail downstream along the river bank for about 200 feet and then wading across the narrow channel to the island. Good agate can be found all along this channel, and on several bars on the other side of the island. The other island is reached by wading from the upper end of the lower one.

"Red, yellow, brown and all combinations of these three colors come in moss agates ranging in size from one ounce to fifteen pound chunks. Lesser amounts of banded agate can be found; along with green agate of great beauty; red wax agate; and a little sagenite and bloodstone. Crystal cavities or geodes, are fairly common in all types of the agate.

"The best time to hunt is immediately after the river has been up (pretty rare occurrence nowadays) and has returned to normal, though good rock can be found at any time. Splashing water from the river up on the gravel helps to

bring out the colors in the agate and makes it much easier to spot, but one must rely on a knowledge of the types higher up on the island.

"Recently three of us picked up 220 pounds of good cutting material in about half a day, so I would say that it is fairly abundant. I am cutting part of it and plan to trade the rest for agate from other localities.

"I would like to say in conclusion that R&M is still the 'Best ever' and that I'll get in news on another locality soon."

"I am sending under separate cover some samples of these types of agate from Neff's Farm."

Six beautiful specimens were received—gray, brown, red, gray and brown in color—five are large cabochons and the last is a 3 inch gray and brown polished slab.

UTAH—The following item was sent in by Howard V. Hamilton, 1340 Crandall Ave., Salt Lake City 6, Utah.

"Fine smoky quartz crystals associated with albite crystals were found in the Mineral Mountains, east of Milford, Beaver Co., Utah. Some of the crystals are lustrous velvety black while others are a light smoky color. The lighter crystals frequently have tiny red garnet crystal inclusions visible.

Mr. A. A. Brown, 143 N. State St., Salina, Utah, faceted some beautiful gems from the light smoky crystals by orienting a garnet inclusion in the apex of the stone. When viewed through the crown one has the illusion of seeing a circle of garnet crystals."

VERMONT—From Grafton, Windham Co., Vt., we have a pinkish granite specimen that was sent in by Mrs. Louise P. Mullen, 24 Chestnut St., Brattleboro, Vt. The specimen is especially interesting as it contains dark gray mangapapite xls.

VIRGINIA—R. Clyde Brown, P.O. Box 154, Fieldale, Va. sent in an interesting specimen—a botryoidal, reddish-black limonite—part of it tarnished golden-yellow, on brownish limonite.

"From a paint mine at Paint Bank, Craig Co., Va."—on label.

WASHINGTON—Robert J. Smith, Rt. 2, Box 190, Puyallup, Wash., sent in a nice epidote specimen—green, radiating masses on gray granite.

"Comes from near Carbon Glacier on Mt. Rainier, Pierce Co., Wash. Some I found had good radiating structure."—on label.

WEST VIRGINIA—In central Greenbrier County, W. Va., is Bob Gee Cave in which large columns and stalactites resembling organ-pipes are found. One large column is called the Buttermaid because of its resemblance to a girl churning butter.

Bob Gee Cave is ½ mile southeast of Trout P. O.

WISCONSIN—Meredith A. Frey, Mount Hope, Wisc., sent in a specimen of dark brown limonite of which part was coated by lustrous black turgite. The locality for the specimen is Seneca, Crawford Co., Wisc.

WYOMING—At Sunrise, Platte Co., Wyo., at the C. F. & I. (Colorado Fuel & Iron) mine, large iron crystals were once obtainable. Presently it is possible to secure specimens of massive specular hematite from this locality. The mine is a large open pit operation, whose operations for some inexplicable reason have long remained a secret—it is reported that the excavation bottoms at close to a mile in depth.

ALASKA—"Sometime ago I read in R&M that you will identify minerals sent in to you, so I am taking advantage of that offer. Here are two specimens:

No. 1 is from Flat Creek, Alaska. Is it chalcedony? No. 2 is from our gravel pit. Is it Thulite?"—letter dated March 14, 1957, from Mary E. King, Star St., Palmer, Alaska.

No. 1 is a bluish-gray chalcedony with rims of pink. The green staining is due to chlorite.

No. 2 is not thulite but rose quartz (a pebble).

AUSTRALIA—The following letter, dated April 14, 1957, was sent by Roger C. H. Doo, 35 Day St., Drummoyne, Sydney, N.S.W., Australia. All minerals mentioned are from Australia.

"I am sending you another small parcel of specimens, in which you will notice a new species which has never been described from Broken Hill previously, the mineral is Chalcophanite. The identification was made by Professor C. Osborne Hutton of Stanford University. It is very rare from the Proprietary Mine, and was found only at one stope on the 300' level, it occurs as brilliant minute red crystals on coronadite or limonite, associated with iodyrite and embolite which the two minerals are often in fine crystal groups.

Other new finds on minerals are:

- A. Kasolite from El Sharana Mine, South Alligator Gorge, Northern Territory. As small crystals or coatings on pitchblende with uranophane, gummite, saleeite, and metatorbernite.
- B. Sklowdowskite from the El Sharana Mine, South Alligator Gorge, Northern Territory, as orange brown coating on pitchblende with autunite, gummite, uranophane, meta-torbernite and an unknown violet brown mineral. Very rare. This mineral is also found at the Rum Jungle, Northern Territory, as an alteration product of pitchblende.
- C. Libethenite from the South Alligator Gorge Area, Northern Territory, as fine terminated crystals with radioactive minerals. Only one specimen is known, from the L. J. Lawrence Collection. First noted occurrence in Australia.
- D. I have recently acquired a very fine specimen of Joseite from the Mount Shamrock Mine, Mount Shamrock, Queensland. As you know this rare bismuth telluride is not often encountered, also this is a rare locality, I cannot obtain any reference regarding the occurrence of this specie but I think it would be interesting to make this short note to you.

"I have met Mr. Wilfred Eyles, of California, several times already. He is a 'swell guy.' First time I met him was at Mr. Chapman's place last year and we have been exchanging minerals since.

"I think little is known about the El Sharana Mine. This place has produced some very fine uranium minerals, the pitchblende is very rich and yields around 93% of U_3O_8 per ton, some specimens are highly altered and produced some brilliant secondary products, the more common ones are gummite, uranophane, autunite, torbernite, metatorbernite, saleeite, etc. The last item sometimes occurs as fine grass-green crystals $\frac{1}{4}$ " big and vividly fluoresces under the ultraviolet lamp. But at present the mine is not open for collectors, and specimens are very difficult to locate.

"There is certainly no doubt about your famous R&M magazine, through it I have corresponded with many of your country's and overseas's collectors, and did exchange with them and very satisfactory in the results.

"I take this opportunity, therefore, to wish your magazine every continued success."

CANADA—Alfred Derdall, 602 W. Gore St., Nelson, B.C., Canada, sent in the following minerals.

Garnet (grossularite). Group of brownish xls on greenish limestone.

Magnetite. Massive $\frac{1}{2}$ inch vein in white feldspar. Tiny brown zircons (fl. orange) embedded in both the magnetite and the feldspar.

Zircon. Pale brown xls (some gemmy) in black mica schist; the zircons fl. orange.

"These specimens were found in a road cut on highway 6, by the Slocan River, 20 miles northwest of Nelson, B.C., Canada."—on label.

HAITI—I. W. Wilenchik, 5613 Wynnefield Ave., Philadelphia 31, Penn., sent some small cleavages of amber-brown calcite which he had collected in Haiti. His letter, dated May 1, 1957, reads:

"I picked this material up a little over 20 miles north of Port au Prince, Haiti. I was to go back there again, but was advised to be prepared to leave Haiti due to the pending revolution, and instead of staying there ten days we stayed three days. I hope to get back there next year.

"They also have their copper ore which is mined by a Canadian Company. I was told that the amber-brown calcite could be found there in large quantities in the northern province which means close to the Dominican Republic."

SCOTLAND—Our faithful and most reliable Scottish subscriber again sends in a most interesting report on mineralogical doings in Scotland. Here is the letter, dated June 7, 1957, from Sandy Ramsay, 1015 Aikenhead Road, King's Park, Glasgow S4, Scotland.

"Your letter to hand and herewith a few items of interest since I last wrote to you.

"First I had some cuttings (clippings) put aside that I thought might be of some interest to your readers but unfortunately we have had a worse catastrophe than a couple of hydrogen bombs in our premises at 1015 Aikenhead Road, to wit an all engulfing avalanche popularly called 'spring cleaning'—a most disturbing process to an old bachelor like myself. In consequence I have only one cutting to send to you, it concerns your beloved island of the Inner Hebrides, Rum, or Rhum as it is variously spelled. It has a note about bloodstone. At its best the bloodstone from Rum compares favorable with the finest in the world; however mostly it is blotched and could be better described as heliotrope, but it looks very pretty when polished.

"In the fields around the small village of Balmeadowside, Fife, Scotland, agates were once found in profusion, as reported in Heddle's 'Mineralogy of Scotland,' and my friend, Archie Forrest, decided to pay the locality a visit. Searching the plowed fields before the sowing, he found a few agates though

none were exceptional. He did run across a nodule, however, that resembled outwardly the thunder-egg from Oregon that I had given him, so he picked it up and on arriving home, sawed it, and found it was indeed a thunder-egg. Though it was not so spherical as the Oregon specimens, it showed the same characteristics, with an agate centre, again nothing exceptional but undoubtedly a thunder-egg. He also brought in a nodule of jasp agate from Cockburnspath (Berwickshire I think is the county but if not it is East Lothian) where some beautiful moss agate has been found.

"A fortnight ago we took my young nephew down the Ayrshire coast, to Croy Beach, where the famous 'Electric Brae' is—with cars running slowly UPHILL in neutral! It is a queer sensation! (This is undoubtedly an optical illusion. The cars don't run UPHILL but DOWNHILL. There is such a hill near Peekskill, N. Y. See 'A hill in reverse'—R&M, June 1942, p. 198—Editor's note). We stopped by at Dunure on our way back to search the beach for agates. I found several small agates, breccia and conglomerate with a little poorish moss, also some small pieces of multi-colored jasper that looked as if they will polish nicely. The beach is laden with small pieces of agate but it is only worth-while collecting after a storm.

"The Glasgow section of the Gemmological Association had a field day, their first ever, last Sunday. We met in St. Enoch Square, Glasgow, and I found that they proposed a trip to the Leadhills. I suggested that we make for Fife and collect agates, however, they were all set on a visit to the Leadhills. Well, who will to Coupar, must to Coupar as they say in my native Fife and we headed south, reaching the Leadhills and picking the wrong dump as usual. By the time they investigated this one and found nothing we reached the dump at the Dod mine at the same time as did the rain. After lunch we searched the Dod mine dump with variable success. The others were pleased with the bits and pieces of massive galena, quartz

xls, weathered calcite that they found but I didn't bother to pick up any. Ian McKenzie picked up several xls of pyrite bigger than any I had seen before from this locality—they were simple cubes, measuring just over half an inch.

"We next set off over the hill to Wanlockhead to the Belton Grain dump where huge masses of quartz xls were found, but a new project had been started since our last visit. The various dumps here were being processed for sphalerite and there was a flume several hundred yards long, riffled at intervals to catch the sphalerite from the crushed rock. Blackjack (sphalerite) is plentiful here but all is massive; one collector came up with a piece about 3 lbs. in weight adorned with worn calcite xls (nailhead). Chalcopyrite is also plentiful. A local man came up to me and asked about some gold that he had found. I was truly sorry to tell him that his 'gold' was pyrite.

"We have re-oriented our summer trip. I am on the track of a pink metamorphic marble from Ballachulish and hope to visit the dumps at Strontian. Will take my Mineralight with me as the calcite at Strontian is very fluorescent, crimson, but much duller than the Franklin, N.J., calcite.

"Well that's all the news at present. Will write about our holiday trip as soon as we get back at the end of July."

The clipping sent in by Sandy concerns Rum, a small Scottish island that is noted for bloodstone. The island

being rugged and very mountainous, is popular also with mountain climbers. The clipping reads as follows:

Forbidden Island

RUM, the Hebridean island bought by the Nature Conservancy Board for an estimated £250,000, is out of bounds now to climbers. For years it has had the reputation of being a sort of Shangri-La, a "forbidden island."

But a colleague who has been there tells me that in recent years it has been fairly easy to visit and that its former owner, Lady Bullough, was usually willing to have visitors on the island—providing they wrote first to ask permission.

It is one of the four islands that constitute the Parish of the Small Isles (the others are the equally quaintly-named Eigg, Muck and Canna).

Climbers, holidaying in Skye, often crossed from Glenbrittle to Rum by motor-launch. They usually landed at Bloodstone Bay where bloodstone was mined for centuries.

After a hard winter the beach and ruined cottage at the bay was littered with dead deer driven from the hills to the shore in search of food.

I expect there will be protests from the climbing clubs over the news that they are to be excluded. It has the same gabbro rock that makes the Cuillins of Skye such a fine climbing ground.

Stuart Smith—Maine's youngest collector!

Stuart Smith is nine years old and is an amateur geologist and mineral collector. He is the son of Mr. & Mrs. Earle S. Smith, 34 Clayton St., Portland, Me. Mr. Smith is a subscriber of R&M.

Young Stuart began collecting specimens about a year ago and in that short space of time he has acquired such a large collection of geological and mineralogical specimens that the local newspaper sent a reporter to interview him and inspect his collection—the write-up appeared in a recent issue of the paper.

Lewis Valachovic wins 1st Prize!

Lewis Valachovic, 110 Burton St., Johnstown, N. Y., who is employed at the U.S. Naval Depot, Scotia, N. Y., recently won 1st prize with his display of minerals at the Art and Hobby Show held by the Depot.

Congratulations Mr. Valachovic! We are all proud of you.

Mr. Valachovic, one of our most active subscribers and boosters, recently formed the Fulton County Mineral Club in his city. And during the past 3 months he must have sent us at least a dozen new subscribers.

Minerals of the Hansonburg Mining District, Socorro Co., N.M.*

Ming-Shan Sun

New Mexico Bureau of Mines and Mineral Resources, Socorro, New Mexico

Introduction

Hansonburg mining district, situated on the north end of the Oscura Mountains and about 35 miles southeast of Socorro, New Mexico, is one of the favorite places for mineral collectors. The minerals are mainly confined to various limestone formations of the Pennsylvanian system. The ore bodies are controlled by several structural features (Kottowski, 1953): (1) fracture zones in massive limestone, (2) brecciated and sheeted massive limestone along faults, and (3) solution cavities in limestone. Replacement of the limestone by ore minerals is not an important process, because earlier silicification of the limestone prevented such replacement (Lasky, 1932). At the present time there is active mining of barite and lead minerals. The minerals described below were identified by immersion method, x-ray powder diffraction method, and by some chemical test.

Hypogene Minerals

Barite: Tabular and massive barite is abundant throughout the ore bodies. It is mined extensively for use in drilling mud.

Chalcopyrite: Minute grains are found.

Dolomite: Small light brown rhombohedral crystals are found in limestone. It is assumed to be hypogene.

Fluorite: Drusy cubic crystals are common. Some cubes are aggregated to form roughly an octahedral form. The

color varies from colorless, light green, blue, to violet blue. Many crystals are violet along the edge and blue inside.

Galena: Cubic crystals associated with fluorite are common in cavities. Combination of octahedron and cube is rare. Cleavable galena is commonly associated with other hypogene minerals. The galena ore is mined when the market is favorable. However, fine galena and fluorite specimens are sought after by mineral collectors incessantly. Some of the galena are altered in varying degree to anglesite and cerrusite.

Pyrite: Common but small in amount. Some pyrite are altered to limonite.

Quartz: Drusy crystals are common in vugs and cavities. Massive quartz is commonly intergrown with other minerals. Most of the quartz are deposited by earlier hypogene solutions, because other hypogene minerals are on top of the drusy or massive quartz. On the other hand, some of the fluorite and other hypogene minerals are on top of the thin layer of drusy quartz.

Tennantite, argentite, enargite (?), and cuprodesclozite (?) have been reported, but they are not found in the samples available for the present study.

Supergene Minerals

Many of the supergene minerals are exquisite in form and splendid in color. A few of these minerals are rare and are found for the first time in New Mexico.

Anglesite: A common alteration mineral of galena. It occurs commonly as concentric bands and encloses some unaltered core of galena. The dark gray

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band is compact anglesite whereas the light gray band is granular anglesite.

Atacamite: A few bright green prismatic crystals are found with other oxidation minerals.

Aurichalcite: It occurs as greenish blue delicate acicular crystals, or plumose incrustations. The greenish blue color is characteristic.

Azurite: The azure blue copper mineral is present and usually associated with malachite.

Brochantite: Emerald-green acicular crystals are found in a few samples. It resembles malachite, but can be distinguished from malachite by their optical properties.

Celestite: Tiny, white, radiated lath-shaped crystals occur on fluorite and other minerals in cavities.

Cerrusite: A small amount of cerussite was identified as an alteration product of galena.

Cyanotrichite: Wool-like aggregates of acicular sky-blue crystals are found closely associated with other oxidation copper minerals, especially malachite, azurite, and aurichalcite.

Gypsum: The last supergene mineral is gypsum which coats practically all the other minerals.

Jarosite: This is a fairly common mineral but small in amount in the Hansonburg mining district.

Limonite: Patches of limonite altered from pyrite or possibly from chalcopyrite are common.

Linarite: This is a very popular mineral with the mineral collectors. It is deep azure-blue, with a vitreous to sub-adamantine luster. Usually it occurs as crusts of elongated or tabular crystals.

Malachite: It occurs as dark green and yellowish green incrustation, delicate fibrous aggregates, radial or divergent fibrous aggregates on quartz, gypsum, or limestone. It is common throughout the limestones formations, although not abundant.

Murdochite: (Cu_6PbO_8) A new copper

lead oxide mineral was found by Percy W. Porter from the Mammoth mine, Tiger, Arizona, and identified and named by Fahey (1955). Murdochite from the Hansonburg mining district was identified shortly after the publication of Fahey's paper. This murdochite is jet-black, and its luster varies from bright metallic adamantine to black dull. Cubes are common, and there are a few cubes combined with small octahedral faces. The crystals range from 2mm across to microscopic size. They are distributed unevenly on drusy quartz or fluorite in a few cavities. Plattnerite crystals are found intimately associated with murdochite in some specimens.

Plattnerite: Tiny prismatic crystals and some botryoidal plattnerite are found associated with murdochite. The maximum size is about 3 mm long and 1 mm across. Many of the large crystals have prominent second order pyramidal faces. The color is jet-black, and the luster varies from bright metallic adamantine to black dull on tarnished faces.

Spangolite: Dark green and emerald-green crystals are found but rare. The combination form of trigonal pyramids, prisms, and basal pinacoids is typical.

Wulfenite: A few brown grains of wulfenite are found. It is not clear whether it is hypogene or supergene.

Hemimorphite, Caledonite, and Covellite have been reported in the Hansonburg mining district, but they are not found in the samples available for the present study.

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THE SAND COLLECTOR

CONDUCTED BY PETER ZODAC
PEEKSKILL, N. Y.

Mica sand from Santa Ana, Calif.

"In 1953 I was one of the Boy Scouts who attended the Boy Scout Jamboree on the Irvine Ranch near Santa Ana (Orange Co.), Calif.

"The sand enclosed was found in a ditch washed out from the water from the showers we had at the scout camp. When we first found the sand we thought we had a gold rush on our hands, boys from all over the camp were panning the stuff. One fellow was carrying it out by the bucketfuls. Later the word got around that it was fool's gold and the excitement stopped for all except a few die-hards.

"I find your sand column very interesting—the rest of the magazine also."—letter dated June 4, 1957, from Jim Haserodt, 166 N. Cherry St., Mt. Gilead, Ohio.

The sample received is a very fine grained, brownish sand consisting of colorless to brownish quartz, gray feldspar, bronzy mica, and a tiny amount of black magnetite. It is the very bronzy mica, which at times has a yellowish-gold color, that was mistaken for gold.

Quartz sand from Hawarden, Iowa

Mrs. Edwin P. Olson, Beresford, S.D., sent in this sample which is a coarse, brown sand. The sand consists chiefly of quartz (smoky, brownish, reddish) with a tiny amount of black magnetite. Gray quartzite, black basalt, and one tiny brown shark's tooth (petrified) also present.

"Sand from gravel pit, Hawarden, Sioux Co., Iowa."—on label.

Beach sand from Bronx Co., N. Y.

This interesting sand sample was sent in by Richard Alba, 1919 McGraw Ave., New York 62, N. Y. The sample comes from Orchard Beach on Long Island Sound and is a fine grained, gray sand. The sand consists chiefly of quartz (colorless, smoky, some brownish, some gray chalcedony) with a small amount of pink garnet, silvery muscovite, and a tiny amount of dull black magnetite. Some sea shells (gray, purple, white) also present.

Orchard Beach is in the northeastern part of Bronx County in New York City.

Lake sand from Brandt Lake, S. D.

This is a coarse grained, brownish sand consisting entirely of quartz (brownish, smoky). It was donated by Mrs. Edwin P. Olson, Beresford, S. D.

"Brandt Lake (from shore), near Madison (Lake Co.), S. D."—on label.

Quartz sand from Bellevue, Texas

Mrs. Ruby Renfro, 2901 Bomar Ave., Fort Worth 3, Texas, sent in this sand sample which is gray in color and medium grained consisting entirely of grayish quartz.

"Sand is from Bellevue, Clay Co., Texas. Permian."—on label.

Quartz sand from Arches N. M., Utah

Ralph W. Diez, 106-B Bard, China Lake, Calif., sent in this sample which he recently collected for us while on a trip to Utah. It is a fine grained, reddish-brown sand consisting entirely of reddish-brown quartz.

"Sand from beneath Delicate Arch, Arches National Monument, Grand Co., Utah. Weathered from Navaho sandstone which forms the Delicate Arch."—on label.

River sand from Kobuk River, Alaska

Gerry and Will Shulman of 113 Huntington Terrace, Newark 8, N. J., collected this sand sample for us when they toured Alaska in 1955 (see their article, *Hunting the R&M subscriber in Alaska*, R&M, March-April 1957, pp. 115-123).

The sample is a medium grained, black sand consisting chiefly of black magnetite with smaller amounts of quartz (smoky, colorless, red carnelian), pinkish garnet, some black rutile, black cassiterite, grayish mica schist and greenish chlorite schist.

"From Kobuk River where a tributary from the Jade Mountain joins it in Alaska,"—on label.

River sand from Cambodia

"This sand is from the Mekong River at the 'Quatre Bras' (Four Arms) at Phnom Penh, Kandal Province, Cambodia ($11^{\circ} 33' \text{ N.}-104^{\circ} 55' \text{ E.}$). The Mekong River starts in Tibet and ends at Saigon, Vietnam. Between June and November when the snow melts in Tibet and the rainy season is on in the Indo-China peninsula, the Mekong River rises as much as 40 feet over its dry season level. In the dry season when the river is low the Tonle Sap River, which joins the Great Lake in the middle of Cambodia and the Mekong, runs into the Mekong. The Mekong then splits into the Mekong and the Bassac River and flows to the sea.

"In the rainy season as the Mekong rises above the level of the Grand Lake (Grand Lac), the Tonle Sap changes direction and part of the waters run up the Tonle Sap and fill the Great Lake which acts as a natural high water reservoir.

"Cambodia is a small but very interesting country and the ruins of its ancient capital, 'Angkor Wat' are famous."—letter dated April 8, 1957, from Lt.

Col. William A. Lucas, Office of the Army Attache, Navy 150 (Box C), F.P.O., San Francisco, Calif.

The sample received from Col. Lucas is a very fine grained, brown sand. It consists of quartz (colorless, smoky, brownish, red carnelian), flesh-colored feldspar, black biotite, silvery muscovite, and a tiny amount of black ilmenite and black magnetite.

"Sand from Mekong River at Phnom Penh, Cambodia,"—on label.

Quartz sand from Wyebridge, Ont. Canada

"It has rained the past couple of days so that I have not been able to work in my rather large garden, and, not wanting to waste the time I worked at trying to straighten out my mineral collection that has been neglected for the past two years. Thus I came across the sand from the bottom of my new well—97 feet deep—which I had promised to send you but had forgotten; I am sending by separate mail, today."—letter dated June 26, 1957, from John W. Edwards, Wyebridge, Ont., Canada.

This sample is a fine grained, gray sand. It consists of quartz (colorless, smoky), pinkish feldspar, pinkish garnet, black magnetite, and gray limestone that fl. lemon—yellow under long wave.

River sand from Capilano River, B. C. Canada

This is a coarse, gray sand. It consists of quartz (milky, smoky, greenish), pinkish feldspar, black magnetite (some embedded in milky quartz), black biotite, and brownish limonite.

"Sand is from Capilano River, Capilano Canyon, North Vancouver, B. C., Canada. At the spot that this sand was collected there is a suspension bridge 204 feet high"—on label of sand that was sent in by Jack M. Park, 148—2nd Ave., Yorkton, Sask., Canada.

Gold sand from Ecuador

The Prospector's Shop, 201 W. San Francisco, Santa Fe, N. Mex., sent us some gold bearing sand which comes from the headhunters area of Ecuador.

The sand is fine grained and golden-yellow in color and consists chiefly of tiny gold flakes and grains with some black magnetite.

"Under the microscope noted numerous other grains in black, pink, green. Have seen pyrite cubes, limonite after pyrite, magnetite.

"This was panned in Rio Napo, Upper Amazon, Jivaro headhunter area, Ecuador."—on label.

The Prospector's Shop informed us that they obtained the gold samples from a good subscriber of ours who had spent many months in Ecuador and who at present is stationed in Nebraska—A. Allen Graffham, 1821 S. 13th St., Lincoln 2, Nebr.

A letter addressed to Mr. Graffham brought back the following interesting reply, dated July 25, 1957:

"In answer to your letter of July 5th, I'm sorry to report that I didn't collect the gold myself. However, I can add a few notes to the occurrence as follows:

"Most of the streams in the Jivaro country of Ecuador carry gold as flour, grains, and nuggets. The Jivaros work the deposits only as they have need of the things they can trade it for. No large scale operations have been undertaken in the area, and indeed the Indians would probably take a dim view of such a project. The gold finds its way via traders into the towns of Banos, Puyo and usually to Quito as a final destination where it is absorbed in the jewelry making there or is used in decorations in the churches.

"The gold apparently originates in quartz veins which are present in the eastern slope of the Andes cutting metamorphosed Devonian and younger rocks. We spent two weeks in this area in December 1955. I did a little prospecting in the Banos, Puyo area and did find a few small pieces of gold in the quartz veins. We saw a number of Jivaro Indians and got a few pictures. However, due to the rain and general bad weather at the time we were there, very few of our pictures were good.

"We heard reports of rich gold bearing quartz veins in the headwaters of

streams cutting back into the Andes to the south of the Banos pass. Certainly there must be fairly rich veins somewhere in the area to produce the amount of gold that is present in the streams in the Amazon headwaters. The region in which these deposits would be expected is practically inaccessible. They can neither be reached by going over the mountains nor by traveling back up the rivers.

"The Incas may have recovered some gold from this region as relics of their occupation of the area have been found quite commonly in the Banos pass area. They were, according to accounts, not able to conquer the Jivaros. Perhaps they exchanged with the Jivaros for their gold as the present traders are doing.

"Aside from the gold I found a few poor pyrite crystals, and a small molybdenite deposit in the Banos area. It is not a good area for mineral specimens. We found one fairly good fossil deposit in Ecuador. Perhaps I can find time to write that up later.

"I don't know where we will be going from here but expect to leave the states for South America or Central America within the next few months."

Shell sand from Funafuti, Ellice Islands

The Ellice Islands constitute a British Crown Colony in the Pacific Ocean and consist of nine islands of which Funafuti is one. The government headquarters of the Ellice Islands is on Funafuti—the island was discovered on March 18, 1819 by Capt. de Peyster. Funafuti comprises 30 islets, 13½ miles by 10 miles in all.

From a beach on Funafuti Island we have a sand sample that was sent us by Max Haleck, Pago Pago, Tutuila Island, American Samoa. The sample is a very attractive one—a peach colored, medium grained sand consisting entirely of sea shells (chiefly peach colored but white, pink, brown also present).

Lake sand from Lake Te Anau, New Zealand

From the largest lake on South Island, New Zealand, we have a sand sample that was collected by Miss Winifred H.

Arnold, 2020 Magnolia Ave., Long Beach 6, Calif. The sample is a coarse grained, white sand consisting chiefly of white feldspar, and smoky quartz. A small amount of black flakes of biotite also present (some of the biotite is embedded in the feldspar). The sand comes from a cove in the south arm of Lake Te Anau and was collected in Dec. 1951.

"Quoted from a pamphlet. 'Lake Te Anau is the largest lake in the South Island, having a coast line estimated at 250 miles. Winding between great canyon-like cliffs rising precipitously from the depth to powerful peak, the lake makes a wonderful scene with its many waterfalls pouring forth in foaming beauty to the glorious blue waters below. While the eastern shore of the lake is low-lying, the other coasts are mountainous, making a trip on the lake in the small steamer a delightful and memorable experience'.

"The lake has several arms. We took a launch trip part way into the South Arm where the heavily forested (bush as they call it) mountain sides go straight down into the lake. The water is very deep and there are very few places where one could even step on the shoreline. The skipper of the launch was very kind in taking the trouble of heading the launch into this tiny cove and jumping ashore to gather up a cupful of this sand which is washed down from the steep hillside to settle on this little spot of level ground."—on label.

River sand from Rio Limon, Panama

Rio Limon is a small stream in the province of Panama in Panama, Central America. From the river (Rio means river) we have a sand sample that was sent us some months ago by Frank Wagner, Box 1486, Balboa, Canal Zone.

The sample is a grayish-black, coarse grained sand. It consists of quartz (colorless, brownish, limpid rock crystals), greenish epidote (gemmy grains, also opaque granular masses), brown limonite, lustrous black magnetite—some are small octahedrons), also a little black lustrous chromite octahedrons.

Beach sand from Stonehaven, Scotland

This is a coarse, gray sand consisting chiefly of smoky quartz with minor amounts of red jasper, green epidote, gray to pink feldspar, dark red hematite, black magnetite, and pink granite.

Stonehaven, in Kincardineshire, Scotland, is on the North Sea and the sand sample had been sent in by Sandy Ramsey, 1015 Aikenhead Road, Kings Park, Glasgow S4, Scotland.

River sand from Ficksburg, So. Africa

F.C.M. Bawden, P.O. Box 1167, and Mrs. I. N. Gush, P.O. Box 1128, both of Johannesburg, South Africa, sent in this sample.

The sample is a coarse, dark gray (almost black) sand and consists chiefly of quartz (brownish, smoky). Some black ilmenite, black magnetite, and a little gray clay also present.

"River sand from small tributary of Caledon River, between Ficksburg and Marquard, Orange Free State, South Africa."—on label.

Desert sand from Namib Desert S. W. Africa

We are indebted to G. W. Wepener, Mines Department, Omaruru, South West Africa, for this sample.

The sample is a very fine grained, brown sand. It consists chiefly of quartz (smoky, reddish) and brown clay which gives the sand its color. A tiny amount of black magnetite and silvery muscovite also present.

"Sand from the Namib desert about 60 miles due west from Walvis Bay, South West Africa."—on label.

Beach sands from Tokelau Islands

The Tokelau is a group of small islands (atolls) in the Pacific Ocean. The group is under New Zealand mandate. One of the group is Nukunono Island that is roughly 7 miles long and 6 miles wide. On the northeastern tip of Nukunono Island is the little town of Tokelau and from its beach we have 2 sand samples that had been sent us by Max

Haleck, Pago Pago, Tutuila Island, American Samoa.

One sample is a coarse, brownish sand consisting chiefly of coral (brown, white) with some sea shells (white, some pink). Under the long wave some of the shells fl. bright blue, like scheelite.

The other sample is a light brown, nicely rounded coarse sand. It consists chiefly of light brown sea shells (some white also), with some coral and a tiny amount of black magnetite.

Shell sand from Magens Bay St. Thomas, Virgin Islands

From the white sandy beach of Magens Bay on the north coast of St. Thomas Island, one of the Virgin Islands, we have a sand sample that was col-

lected for us by Mrs. G. D. Weibe, 310 Beach Ave., Mamaroneck, N. Y.

The sample is a fine grained, gray sand. It consists chiefly of sea shells (gray, white, some reddish), a small amount of gray coral, and a very tiny amount of black magnetite. The sand fl. yellow under long wave.

"I didn't get to look for rocks on our last trip although I noticed with interest the new lime and sandstone formations which seem to occur all around St. Thomas and St. Croix and, at least, on the north-central shore of Puerto Rico."—letter dated May 20, 1957, from Mrs. Weibe.

The Virgin Islands (U. S. Possession in the West Indies) lie 43 miles east of Puerto Rico. St. Thomas has an area of 32 sq. miles.

Frank Leggett (Obituary Notice)

I recently journeyed over to Meredith, N. H., to pay my last respects to an old friend of mine, Frank Leggett.

Mr. Frank Leggett died suddenly on July 28, 1957, while on a short mineral trip. He was 59 years old. Born in North Berwick, Maine, and had been collecting minerals for well over 25 years.

He had one of the finest collections in that vicinity and a wide knowledge of the mines and minerals in New Hampshire and Maine.

He was prominent in the topaz diggings at Passaconaway, N. H., and was noted for his knowledge of the many rare minerals at the Palermo mine at N. Groton, N. H.

He had known that his time was short but he kept on until the end came. He was widely known for his pleasant smile and was always ready with a helping hand.

He also taught silver working for the New Hampshire Arts & Crafts evening school.

He will be missed by the younger collectors as well as by those more advanced.

We all looked up to him.

Charles F. Marble
Buckfield, Maine

The Ten Commandments for The Rockhound In A Rock Shop

- 1 Thou shalt not take the dealer's time, unless thou art willing to pay him accordingly.
- 2 Thou shalt patronize thy local dealer.
- 3 Thou shalt observe the signs the dealer has posted in his shop.
- 4 Thou shalt not handle specimens unless granted permission.
- 5 Thou shalt not allow thy youngsters to run berserk in the dealer's shop.
- 6 Thou shalt identify thy self—i.e., dealer, collector, browser, tourist, etc.
- 7 Thou shalt not criticize the dealer's identification of his own materials.
(It is a big part of his professional business to be as accurate as possible on his materials.)
- 8 Thou shalt not tell the dealer how much thou hast spent elsewhere (especially at a competitor's shop) unless thou art willing to spend likewise in his shop.
- 9 Thou shalt remember that the dealer is entitled to a just profit on his materials to cover the costs of his business.
- 10 Thou shalt remember the other nine commandments.



WOMEN'S CORNER OF R&M

Conducted by Winnie Bourne

c/o Rocks and Minerals

Box 29, Peekskill, N. Y.

I have received a number of letters from women readers of this column who have become keenly interested in minerals but being rank beginners have no idea how to start collecting. They know of no one in their area who may have a similar interest in minerals nor have they ever heard of a locality in their vicinity. And if there was a locality how could they find out how to reach it and how could they recognize any specimens they might be able to pick up? This might seem like a very tough problem but it can be overcome. Here are some pointers.

Write a letter to the Editor of your local newspaper petitioning his help. Tell him you would like to know if a mine, quarry, gravel pit or any interesting rock formation is present in your area and how to reach them. Also what rocks and minerals are present at these locations. He will print your letter so be sure that your address and telephone number appear. And if you state that you are interested in collecting minerals, someone is bound to contact you. In this way you may not only learn of the existence of localities in your area but may even make some new friends who are also interested in minerals.

It frequently happens that people know the existence of a mine or a quarry (long abandoned) but haven't the slightest idea what minerals may occur in them. Let's assume that a limestone quarry is present and you have no idea what limestone even looks like. In this case, send \$2 or \$3 to a mineral dealer advertising in R&M requesting a specimen of limestone and 2 or 3 common minerals that are to be found in a limestone quarry. When you receive these

specimens, examine them carefully, then go to the quarry and try and find specimens to match those obtained from the dealer. This is a practical way to learn mineralogy.

When your specimens arrive from the dealer, examine also how the package is addressed, that the box is a sturdy one, how the specimens are wrapped and that each specimen is accompanied by a label giving the name of the mineral and its locality. Labels are tremendously important to a collector and one should always accompany a specimen. Remember this—a mineral that has no label (giving its name and locality) is of NO value to a collector.

Having learned of the existence of a locality in your area, you will want to visit it. Some preparations should be made if you want to do any collecting. Here are some items that should be given special attention:

Clothes: Wear sensible clothes—those that will give you freedom of the body as you may have to do some climbing. Old clothes are preferable, as you want to be comfortable. By all means wear old shoes—new ones will soon become scratched by the sharp rocks and—no high heels, if you want to be comfortable. If you wear glasses and have an old pair, wear the old pair as new ones might become scratched by flying particles or tiny rock fragments.

Mineral Hammer: You will need a mineral hammer for breaking up rocks. An Estwing hammer is the best and most popular as it is made of one piece so that the head will not fly off (all mineral dealers carry them in stock and they cost about \$5).

Chisel: A chisel is recommended for free-

ing minerals from large boulders or from the face of a rock wall (obtainable from your local hardware store).

Newspapers and small boxes: Newspapers are necessary for wrapping delicate specimens. Fragile minerals are best protected by placing them in small boxes.

Collecting bag: A bag is important for carrying specimens collected. Any strong, heavy bag will do—army knapsacks are ideal. Strong, sturdy market baskets with handles are excellent.

Notebook and pencil: These should be taken along to jot down notes on minerals found, to make sketches, or for any other data such as mileage to the locality, etc. You should also have a number of rough paper labels for marking any special minerals found.

Map: A good road map is also important as you can spot on it the location of the locality visited.

Before leaving the locality make a sketch of it giving its approximate size (guess at it) then draw a map of the route home with mileages at important junctions, etc., for future reference.

On reaching home, wash all the specimens collected in water as most of them may be very dirty—sometimes a brush is necessary to do a good job. Set the specimens aside to dry and when thoroughly dried examine each carefully, labelling the best of each type which are to be placed in your collection. Mark the date when collected on the back of each label.

Please remember that most specimens collected at a locality are dusty or dirty and so must be washed. Washing a specimen not only removes loose particles of sand, leaves, etc. but greatly improves its appearance. Women like neat and attractive items—include minerals in this category.

You will be making many trips to localities so why not keep a diary of such trips. Label your first notebook No. 1—then everytime you go on a trip record each, giving its date (day of week also), locality visited, names of those in your party, what minerals were found, etc.

May your first attempt to visit a locality be a most successful one. Good hunting to you all.

Winnie.

P.S.—Give the Frank Duncan Fund a boost. For details see this issue, p. 590.

The following letter was recently received from Mrs. E. R. Willis, 17-3rd Ave., Chilliwack, B. C., Canada.

"I enjoy the Women's Corner in R&M. I have loaned copies of the magazine to my friends who have made favorable remarks about this interesting feature in R&M.

"One Sunday we went rock hunting on the Little Fraser River near here where I found a small piece of jade that weighs about one lb. It's rather unusual for jade as it has colors of brown and two shades of green. We didn't think it was jade at first but we had it identified; it is of very good grade with a hardness of 8.

"We all belong to the Fraser Canyon Jade and Rock Society. At present we have 60 members and about 10 pebble-pups (youngsters). We meet the 2nd Sunday of the month, one month in Hope (35 miles east of Chilliwack) and the next in Chilliwack. At the present time our plans are for a mineralogical library."

Finds 90-pound Agate, Carries it Half Mile

DALLAS (AP) — Rock collector Jesse Kirby suspects he got a little excited the other day when he found a big botryoidal plume agate, said to be the largest such semi-precious stone on record.

Kirby, a 124-pounder, discovered it on the Frank Woodward ranch in Brewster County, Texas. Gleelessly he carried it half a mile down a mountainside to his station wagon.

Then Kirby found the stone weighed 90 pounds. He says he hasn't been able to lift it since. He estimated it's worth several thousand dollars.

Lancaster "New Era", Sept. 28, 1957

Above item sent in by James Neal, Mount Joy, Pa.

THE MICRO-MOUNTER

Conducted by Neal Yedlin—129 Englewood Drive, New Haven, Conn.

This is a gripe. Normally, we dislike complainers but in the interest of fair play and of the advancement of the M/M art we feel we must air this one. We print, herewith, a letter from an ardent M/M collector, name available to interested parties, who tells of experiences recently.

"Dear Mr. Yedlin:

I am writing in hopes that an experience which members of the Baltimore Mineral Society recently had will be of some value in precluding a future similar situation. Our society decided that since three members were planning to attend the National Convention in Denver it would be worthwhile entering a group of micro-mounts in competition.

Many long hours were spent by a group in selecting the finest from each member's collection, and more time in policing the mounts and making uniform labels. In all, there were fifty of what we considered rare and choice mounts. These were set in a typical micro-mount cabinet drawer and transported with great care and high hopes to Denver.

Unfortunately, our efforts were to no purpose. The exhibit case assigned to us was in a poorly lighted area, and was separate and distant from the other entries. When awards were made our display received none. You may think at this point we are a group of poor losers. This however, is not the case, for we've won and lost before. When the judges were queried as to their decision they could offer no explanation. No exhibit was viewed with a 'scope. One exhibitor had placed a hand lens over his mounts and he got first place. The fortunate exhibitors adjacent to him got second and third. No individual mounts were inspected. No classification as to selection of material, quality, technique, or overall appearance was made.

I, or anyone viewing the entries, could tell nothing of their quality, rarity, or workmanship. There was no mention in the rules that a competitor supply microscope. Nor did the Federation supply any.

This all brings me to suggest that a 'scope be required in all M/M competitions and that judges use them. If an organization doesn't have experienced judges capable of appraising micro-mounts it should not include this class in competition."

A strong letter. We were shown the 50 M/Ms exhibited, and while we did not see the others, we can testify as to the rarity and quality of the mounts we did view. We wonder how many collectors can show heteromorphite rings, xld gold, osumilite, caberite, a series of rare Franklin, N. J. mounts, Belgian Congo radio-actives and others equally fine.

Personally we abhor competition for awards in minerals. The business of "mine are better than yours" in any phase of science or cultural activity is deplorable. Far better, in a world too filled with needless competitive arrogance, is the philosophy "mine are better this year than they were last year."

Since, however, competition is rife, and awards are being made, it behooves the federations and clubs to establish a set of standards, and to compel both the exhibitors and judges to be guided by these standards.

Judging cannot be a haphazard thing. Detailed study of the exhibit, and the totals of a set of numerical indices should be used to arrive at a definite status. Let us, merely to illustrate, set up such an operating procedure.

Classification	Unit Value
Quality of Material	4
Rarity of Material	3
Execution of Mount	2
Overall Appearance	1
Total	10

This for each mount. Total and divide by the number of mounts exhibited to give an average, or index. The highest index number would be declared winner.

You may differ with our rating system. You may want to change the classification. Well and good. But *do* establish standards, and be certain the judges adhere to these standards in arriving at their decisions.

Further suggestions:

1. Keep all like exhibits and competitions together for ease of judging and for comparisons.
2. Where specific equipment is required, i.e. microscopes, fluorescent lights, etc., either supply such tools or compel the competitor to furnish his own. (And do not judge the competition on the basis of this incidental equipment.)
3. Have capable judges, experienced in the field in which they are doing the evaluating.
4. Do not offer a competition as a "sop" to a few specialists. If there isn't enough interest to make it worth while, don't have it. Show a specialized collection entirely as an exhibition and do not force competition where none is warranted.

News, Notes and Incidental Gossip

A. *Paul Desautels*, M/M collector extraordinary, has changed the base of his operations from Baltimore, Md. to Washington, D.C. He has resigned from the department of chemistry at Maryland State Teachers College and is now associate curator of mineralogy and petrology at the National Museum. Good, good! Now we'll have a superb collection of M/Ms at the Smithsonian.

B. *Some recent additions* to our M/M collection.

1. Ilvaite—superb black lustrous prismatic xls.
2. Hinsdalite in white rhombs on enargite.
3. Ludlamite and vivianite.
4. Clinohedrite on datolite. Franklin, N. J.
5. Groutite in striated black xls.
6. Monazite, pink twins.
7. Greenockite, minute red hemimorphic xls. (60 X needed) on xld wavelite.
8. Childrenite, black xls.
9. Vauxite, paravauxite and metavauxite, (Numbers 6 thru 9 are from Llallagua, Bolivia.)
10. Wire gold, with minute octahedra along the wires, from Washington State.
11. Manganite, prismatic terminated lustrous black xls, Crimora, Va.
12. Wulfenite & pyromorphite, Phoenixville, Pa.
13. Sapphire, blue and yellow xls, Ceylon.
14. Brazilianite, Smith Mine, New Hampshire.
15. Osumilite (high temperature cordierite) from Japan.
16. Rutile on beryl, Alexander Co., N. C.

C. A *reminder*. Reprint of Will's outstanding article, originally in *ROCKS AND MINERALS* (Dec. 1931) "Preparation of Micro-Mounts". Fifty cents (no stamps) to Baltimore Mineral Society c/o Md. Academy of Sciences, 400 Cathedral St., Baltimore, Md. This you gotta have. It's the most.

D. An *Associated Press* dispatch, dated August 14th last, announces the reopening of the famous El Paso mine at Cripple Creek, Colorado. From here came wonderful calaverite, sylvanite and krennerite specimens, gold and fluorite. Our own collection boasts eleven mounts from this area.

The news article goes on to say, "—opening for a new purpose. The second level will be used to grow mushrooms."

Sic transit gloria mundi.

WITH OUR ADVERTISERS

Conducted by James N. Bourne
c/o Rocks and Minerals, Box 29
Peekskill, N. Y.

Advertisers are cordially invited to submit News Items to this Department

A new advertiser with R&M with this issue and one whom we are proud to have with us is Prof. Wendell B. Johnson, owner of the Gem and Rock Shop, P. O. Box 8521, Jackson 6, Mississippi. Prof. Johnson is a true geologist being on the staff of Milsaps College in the Dept. of Geology, also working for the State of Mississippi and will be a valuable asset to the mineral field as he has authored several articles relating to minerals.

"The Gem and Rock Shop is offering quality rough, cut stones, gem identification and a special this month of 5 mm round Jade cabochons from Burma at only \$1.00, a good buy. Prof. Johnson of the Gem and Rock Shop welcomes rockhounds to his establishment in Jackson, Mississippi. Ask him to show you his unique and very beautiful quartz crystal collection."

Note: We wish Prof. Johnson every success in his new Rock and Gem Shop and urge readers to get acquainted with him as he is a fine gentleman and he will be most pleased to hear from you.

A note of interest from Edward J. Platt, Gen. Mgr., of Technicraft Lapidaries Corp., 3560 Broadway, New York 31, N. Y., reads as follows:

"In the past 10 years we have been expanding at a steady pace, now in the coming year our expansion program will be increased about double normal rate. A few of the new departments we will now include along with our regular line are—gem rough and minerals wholesale, a new mineral department, cut gem dept., both odd and regular gems, gem carvings and decorative gem and min-

eral pieces, increased book library on minerals, etc.

"Our new mineral venture along with the Collector's gem cut dept. will be operated by Mr. Maurice Jubiler who joined our firm a short while ago."

Note: Technicraft Lapidaries Corp. has over a decade of service to the Industry of Lapidary and Jewelry arts. Their expansion program is designed to further increase their service to those interested in any of the above departments. Technicraft Lapidaries Corp., will appreciate your inquiries and better yet, when in New York drop in on them, you'll be pleased.

From George A. Bruce, Pres., International Import Co., 604 Peachtree St. N.E., Atlanta 8, Ga., is an item below describing some very fine quality gems just acquired to meet the demand of those looking for good material at moderate prices.

"We have just received hundreds of gems, both faceted and cabochon, cut from very fine material. The cabochons are in standard-sizes and shapes, in ten different materials and priced from only 40¢ ea. up. The quality is so nice that we feel they represent an unusually good "buy". The faceted stones consist of almost every known gem material including a number of rare gems in which we specialize. For those desiring very large stones, we have managed to acquire such faceted ones as peridots, 51.00 and 60.00 cts., green beryl, 32.22 cts., hessonite garnet, 26.45 cts., amethyst, 42.65 cts., yellow sapphire, 17.72 cts., blue sapphire, 21.65 cts., orchid sapphire, 15.56 cts., green sapphire, 12.42 cts., white

sapphire, 15.73 cts., apricot sapphire, 13.35 cts., red spinel, 26.20 cts., spodumene, 28.97 cts., etc.

"Among the rare gems are a padparashah, zincites, sphehens, demantoid garnets, benitoites, andalucites, blue apatites, sinhalite, kornrupines, kyanite, enstatites, iolites and many, many more.

"We believe that our policy of sending stones to reliable persons on 10-day approval without obligation to buy anything is the best way of allowing everyone a chance to examine the gems. The quality is of the best and this, coupled with moderate prices, has made us many friends among the collectors. We are particularly indebted to ROCKS AND MINERALS as a medium by which we can reach these collectors as well as a constant source of fascinating and enlightening reading. You are doing a world of good and we wish you all manner of success."

Note: With the holidays soon to be on us here's a chance to acquire some excellent material for a gift to a loved one and also to enhance your own collection with a rare gem or two. Your inquiry or order will receive prompt attention. Act now and obtain some excellent buys.

A little note from R. D. Tweedie, 5643 Lone Pine Rd., Sebastopol, Calif., advertising in R&M via the classified section reads as follows:

"I enclose a few pieces of the material 'baroque jasper' so you may know what I have to offer. If you know any dealer who may be interested in quantity, would appreciate your referring the material to him."

Note: A few pieces of brown, baroque jasper were received by us from Mr. Tweedie and are very nice. We would be pleased to remind dealers or collectors interested in some fine jasper in quantity to contact Mr. Tweedie at the above address. He will be most appreciative to receive your inquiry.

The following item was received from Roy Plummer of Plummer's Minerals, 4720 Point Loma Ave., San Diego 7, Calif. Plummer's Minerals has been advertising through R&M a good many years and we are pleased to include this item which reads as follows:

"Now in our 12th year of business we make a specialty of supplying CHOICE MINERAL SPECIMENS and GEM CRYSTALS to folks all over the U.S. and some foreign countries. We obtain our specimens from reliable suppliers all over the world, many of them exclusive with us.

"We try to make it easy for you to do business here. POSTAGE will be charged extra so please allow about 20¢ per pound when you order. TAXES, if any, are included in the price shown. We believe everyone likes FAST SERVICE so we fill and ship orders promptly, often on the same day received. 'SPECIAL HANDLING' parcel post service gets it there days sooner and costs only 25¢ extra. We often ship this way to speed up your order.

"First time customers please send payment with order or at least a deposit. Regular customers may order on APPROVAL, make their selections and then send payment (take two weeks if you like). Return any unwanted items for credit. No matter how you order we agree to make prompt refund on anything you wish to return. You'll be considered a "regular customer" when your second order arrives.

"I'm 51, have four children and three grandchildren. Started this business because I believed folks wanted a reliable place to buy mineral specimens honestly described and fairly priced. I own my own home and store building. The store was built especially for this business. Folks from all over the U.S. visit us. For recreation I like to shoot. I load my own ammunition and shoot my .45 Colt on the local police pistol range, also in the nearby desert when I find the time to get away."

Note: Mr. Plummer is very sincere in his desire to be of aid to his customer's

needs etc. His price list each month contains some very fine buys. Be a regular customer with Plummer's and receive such a list each month for your convenience. Mr. Plummer himself answers all inquiries and gives prompt attention to orders received also. Drop him a line today and take note of his ad with each issue of R&M.

Another fine addition to the ranks of R&M advertisers is the Elk Electric Manufacturing Company, P. O. Box 216, Franklin Square, L. I., N. Y., Manufacturers of blacklight equipment since 1930.

Their ad with this issue features a **DO IT YOURSELF "BLACKLIGHT KIT."**

"The kit comes complete with housing, ballasts, lamps (long and short wave), sockets, filters, switches, line cord, handle, nuts and bolts, wiring diagram and complete assembling instructions. The assembling and operation of this kit has been simplified as much as possible in order to eliminate wasted time and energy.

"The unit normally operates from 110-120 volt, 60 cycles AC, but is also adaptable to battery operation. This newly developed Blacklight Kit provides filtered ultraviolet in sufficient intensity on both long and short wave lengths to observe the fluorescence of minerals when prospecting."

Note: The above Blacklight kit would make a fine gift for husband, wife or any member of family or friend. This kit can be assembled in 90 minutes and would be a useful gift to anyone interested in minerals and the satisfaction of assembling your own blacklight would be great."

Joining R&M as a display advertiser with this issue are Jewelmets by Jay O'Day, P. O. Box 6, Rancho Mirage, Calif. An item of introduction re: to the owners, Dr. and Mrs. Walter A. Emery, reads as follows:

"Briefly—Walter A. Emery, D.D.S.,

practiced for several years in Nebraska until entering World War II. Served with the Army Air Force (as a Dentist) in the South Pacific. A plane crash off the southern coast of Japan into the Pacific Ocean at the close of the war ended a Dental profession. Three years in Army hospitals after the war—traveled for about two years—finally went to Bandon by the Sea, Oregon to build and retire! Built our own home there on the southern Oregon coast.

"Became interested in the wonderful agates, jasper, petrified wood on the Oregon coast—isolated beaches became our private challenge! The home required three years to build because of the time out for agate hunting. After collecting tons of the stuff we could stand it no longer—purchased small equipment and with said equipment plus Dental instruments. Dr. Emery made a few pieces of jewelry for me—friends received gifts—soon wanted to buy for their friends—and friends, friends. So, we painlessly grew into our Jewelry business. Moved to Palm Springs, California (altho we still have property in Oregon) area to be more in the middle of the fashion and commercial center of Gemstones. **JEWELGEMS** by **JAY O'DAY** is our trade name. We live at Bing Crosby's "Blue Skies Trailer Village" just one mile from our shop which is open for the season from October 1st to May 1st. During the summer months we have a smaller modern travel trailer we use to travel and sell to our wholesale accounts. We have cutting, polishing, tumbling equipment next to our retail store and have developed a wonderful business in this fun in the sun land."

May we take this opportunity to express our appreciation for the fine co-operation received from our advertisers this year. Please accept our best wishes for a **MERRY CHRISTMAS AND A HAPPY NEW YEAR** and may the year 1958 be more prosperous to you than any year before.

James N. Bourne, Adv. Mgr.



Fossil Department

Conducted by Howard V. Hamilton

1340 Crandall Avenue

Salt Lake City 6, Utah



Rocks and Minerals - - Why Not Fossils?

By William H. Matthews III

Lamar State College of Technology, Beaumont, Texas

Recently there has been a definite trend on the part of rockhounds to become increasingly interested in fossils. This is certainly an encouraging development—and one that professional geologists hope will continue.

The average rock and mineral hobbyist has done a very creditable job toward becoming proficient in the sciences of mineralogy, petrology and gemology, and it is only natural that they should desire to broaden the scope of their geologic interest.

The work of the mineral hobbyist has done much to bring geology to the attention of the general public and to further lay education in the fields of rocks and minerals. The excellent displays and collections shown at state and county fairs, hobby shows, and science fairs are striking testimonials to the ability and intellectual curiosity of these exhibitors.

It is but a short step from the techniques and terminology of mineralogy to the field of paleontology and the fascinating game of unraveling the history of life upon the earth.

One frequently hears that "Fossils are interesting, but I could never learn those long funny names". The writer is of the opinion that those "long funny names" are no more difficult to understand than any of the other scientific and mineralogical terms that are so easily and correctly used by most mineral collectors. It is no more unusual for

the amateur fossil enthusiast to speak of a fossil clam as a pelecypod or a snail as a gastropod, than to hear the rockhound to refer to "gyp" rock" as selenite or "fool's gold" as pyrite. Each branch of science and each hobby has its own terminology or language that must be learned before one can gain maximum enjoyment from participation in the subject. The language of the paleontologist is largely biological in nature—just as the language of mineralogy is clearly related to chemical terminology. Those persons having had high school or college biology find it easy to acquire a working knowledge of fossils. Those with no biological background learn quickly once they understand the reason for, and the derivation of, these terms.

For convenience of study, the mineral kingdom has been divided into groups with definite physical and chemical characteristics. The animal kingdom is similarly divided and organisms with like characteristics are placed in similar categories. These divisions frequently carry names of Greek or Latin derivation which appear unfamiliar at first, but usually refer to some characteristic of the plants or animals under consideration.

Once the terminology is understood the rockhound is able to collect, study, and classify his fossils in much the same manner as he does his mineral specimens. There is, however, much more to be derived from the fossil than the mere

acquisition of another specimen for the display cabinet. Each fossil represents the remains, or indication of the presence of a once living plant or animal. When studied in comparison with recent forms they may give some evidence of the conditions under which these organisms lived in the geologic past. Fossils are also useful in that they are concrete evidence of the changes that organisms have undergone in attaining their present state of development. In general fossils are more scarce and more primitive in older rocks, becoming more abundant, more specialized and more closely related to modern forms as we near Recent time. By matching similar faunas (natural assemblages of fossil animals) in one rock unit with those of another the geologist can correlate (or match the rocks) from one area to the other, and determine the relative age of the beds. Other fossils may be restricted to rocks of a very definite age, and are always indicative of rocks of that age. Due to their special value to the geologist they are called *guide fossils* or *index fossils*.

Minerals and fossils are often found together in sedimentary rocks under the same conditions and in the same locations. Many of the techniques of hunting, collecting, preparation and labeling are common to minerals and fossils alike, and the collection of the two may be carried on simultaneously.

In order to provide beginning collectors with a paleontological background and some knowledge of where to find and how to identify fossils, several state geological surveys, museums and universities have prepared publications dealing with the fossils of their respective states. Ohio, Illinois, Missouri and New York are among the states which have made contributions of this sort. These books usually present a review of basic paleontological principles, an introduction to the classification and uses of fossils, numerous illustrations and diagrams, and sources of reference material for the identification of specimens. Also, in response to many requests, the writer is preparing a "popular" fossil book for

the amateur paleontologist and naturalist. Written with a minimum of technical jargon, this book will be suitable for Boy Scouts, high school and college teachers and students, camp counselors, earth science hobbyists, nature clubs and vacationists. It is believed that the availability of such a publication at a moderate price will further stimulate the accelerated interest that is being shown in the study of fossils. Meanwhile several excellent college textbooks of paleontology are available but these are expensive, and usually too technical for the beginner.

Most colleges and universities with Geology Departments have relatively non-technical reference books in their libraries, and the geology faculty members of these schools are usually happy to identify fossils that are brought in to them. Most of the state museums and geological surveys also extend this courtesy to the amateur collector, and many of them will allow him to compare his specimens with those in the institutional collections. These institutions usually have members of their staffs that are willing to give talks on fossils and fossil hunting, or to lead rock and mineral clubs on field trips.

With the assistance and encouragement that is available to most clubs and individuals the typical rockhound can soon become a competent amateur paleontologist—thereby adding considerably to the pleasures of an already fascinating hobby.

(In the next issue of **ROCKS AND MINERALS** Professor Matthews will discuss "What Fossils Are and How They Are Classified").

Attention S.W. Michigan Rockhounds!

Editor R&M:

I would very much appreciate it if you would stick in a line somewhere inquiring after fellow rockhounds in the southwestern part of Michigan.

Karl D. Albrecht
820 Pine Street
St. Joseph, Mich.

Oct. 1, 1957

VISITING ROCKHOUNDS WELCOME

The following subscribers would be delighted to have rockhounds call on them when passing through their cities. If any one else wants his name added to the list, just let us know.

R. A. Richards, Box 44,
Morristown, Ariz.

Mrs. John A. Talbot,
1221 W. 6th Ave., Pine Bluff, Ark.

Paul F. Patchick,
908 Centinela Ave., Santa Monica, Calif.

Mrs. George W. Matson,
Matson Ranch, South Fork, Calif.

Mr. & Mrs. W. T. Graham, 1500 Kawana
Springs Road, Santa Rosa, Calif.

Rose Wey,
12525 S. Rose Ave., Downey, Calif.

M. W. Gilbert,
2011 N. Raymond Ave., Pasadena, Calif.

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Grand Junction, Colo.

Mrs. Austin W. Harris,
Newent Road, Jewett City, Conn.

Mrs. James F. Donohue,
441 Main St., East Hartford, Conn.

W. R. Olsen, New Port Richey, Fla.

Michael Dee,
231-24th Ave. No., St. Petersburg, Fla.

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MacDill A.F.B., Tampa, Fla.

Meade B. Norman,
1524 Mitchell Ave., Tallahassee, Fla.

Bert C. Cole,
2233 Broadway, Boise, Idaho.

Galena Rock & Mineral Museum,
Route 20 & 80, Galena, Ill.

Russell P. Neuwerk,
540-29th Ave., Moline, Ill.

Elmer B. Rowley,
214 Ridge St., Glens Falls, N. Y.

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Bill Prather, U.S. 281,
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Mrs. Fred Strout,
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Robert T. Davis, Newry, Maine

David B. Sleeper,
Box 4, Sabuttus, Me.

Leroy Leisure,
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704 Gratiot Ave., Saginaw, Mich.

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R1 Box 71, Republic, Mich.

Carl F. Lemin,
624 E. Division St., Ishpeming, Mich.

Lee E. Payne,
Rt. 1 (Eagle Lake). Willmar, Minn.

Milton Wernecke,
1631 W. 5th St., Winona, Minn.

Geo. C. Dick,
9207 Argyle, Overland 14, Mo.

Brentwood Lapidary & Gem Shop,
8913 White Ave., St. Louis 17, Mo.
Phone WOODland 2-4067

Robert Kissick,
7140 Theodore Pl., St. Louis 20, Mo.

Alvin W. Kemp,
231 Elmwood Blvd., Jackson, Mo.

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Visiting Rockhounds Welcome (Continued)

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169 Parkwood Ave., Lakewood 7, Ohio

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1446 Earlham Dr., Dayton 6, Ohio

Eileen Philpott (16 yrs.),
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Mrs. Ammon Schwartzbach,
2239 Logan St., Harrisburg, Pa.

Paul M. Popovich,
124 Lincoln Ave., Leechburg, Pa.

Theresa Farnham,
R D 2, Cambridge Springs, Pa.

Leighton Donley,
Box 101, Miners Village, Cornwall, Pa.

H. C. Van Tassel,
8009 Westmoreland Ave.
Pittsburgh 18, Pa.

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200 Atwell Ave., Providence, R. I.

Adolph Hillstead,
1309 4th St., Brookings, S. D.

M. S. Ortman, Ortman Museum,
6 mi N. of Marion, S.D.

Mrs. Edwin P. Olson,
Beresford, S. D.

P. M. Plimmer, Box 701, Alpine, Texas
(2 miles west on U.S. 67 & 90)

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3011 Spurlock St., Dallas 23, Texas

Howard V. Hamilton, 1340 Crandall
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Denis Kohl,
1124 Curtiss Ave., Ames, Iowa

Mrs. Vance Butterfield, Route 2-Box 90,
Minott Road, Westminster, Mass.

Kenneth Fowler,
Box 448, Bayard, Nebr.

Richard C. Haefner,
217 Nevin St., Lancaster, Penna.

Egbert McElroy,
Round Lake Road, Monroe, N. Y.

THE AMATEUR LAPIDARY

Conducted by Captain George W. Owens

Hq. Sq. 384th Bombardment Wing, Little Rock Air Force Base, Jacksonville, Arkansas

Amateur and professional lapidaries are cordially invited to submit contributions and so make this department of interest to all

REPORT ON CHRYSOBERYL

Chrysoberyl is one of our hardest gem-minerals and most tough. Fine chrysoberyls are less expensive than fine rubies or emeralds and even some sapphires. Chrysoberyl, like most other gems, is subject to many imperfections. The clearer the stone, the more its value. Some cut stones are exceptionally free from imperfections. One such beauty reposes in the author's collection. This stone was once, and still is, promised to a collector who recently moved to New Jersey. It is hoped he never exercises his right and that the stone will remain in the collection as it is one of the finest of its type.

Chrysoberyl is a beryllium aluminate, BeAl_2O_4 and is closely related to another beautiful gem: spinel. It is less closely related to the beryl. Iron oxide, chromic oxide, and vanadium all have been listed as probable causes of the coloring of chrysoberyls.

Since so many authorities have so many conflicting ideas as to the cause of the various colors, this column will make no other comment than that whatever causes it, the results are most beautiful.

There are several varieties of chrysoberyl, all of value, and all making welcome additions to any general collection of gems. When transparent in tones of yellow, greenish-yellow, yellowish-brown, bluish-green, green, and olive-green, it is generally correctly termed simply as chrysoberyl. However, the greenish-yellow to yellow-green is also known as chrysolite chrysoberyl. Bluish-green to dark yellow-green stones that change to red or purple under artificial light are termed alexandrite.

When cloudy and displaying optical

phenomena, (a floating, sometimes billowy light which moves as the stone is moved), it is called cymophane. It is not a cat's-eye. Cymophane does occur in cat's-eye type material and as such is correctly described as chrysoberyl cat's-eye. Incidentally, the "eye" may be bluish, greenish, silver, or more rarely, yellow, which is preferred.

Chrysoberyl is the third hardest of our natural gems. It cuts and polishes readily and is a pleasure to work. The angles used by the author are those recommended by Mr. "Dick" Mitchel of MDR, maker of the very excellent MDR facet machine and other fine lapidary equipment. "Dick" has spent considerable time in constructing ready reference tables and has published two books of tables on various cuts. Both books are excellent and of great value to any one that enjoys faceting. A line to MDR, 4853-N West Jefferson Blvd., Los Angeles 16, California will bring you information on his products. "Dick" also stocks quality rough and rare items whenever possible. Over the years the author has purchased both rare and common materials from him and has yet to make a poor purchase.

Of all the types of chrysoberyl, alexandrite is the most interesting due to its unique change of color. Alexandrites vary in quality, depending upon the beauty of both the night and daylight color of the stone. All alexandrites are valuable, but those that are fine emerald green turning to a deep raspberry at night are most highly prized. The color variation in alexandrites is great and probably no two stones will have a similar change. While alexandrite rough is found in large sizes, it is so subject to flaws and so stratified that often only

a small gem may be obtained from a large piece of rough. Probably the best alexandrite comes from Ceylon. (At least, if any is now being produced in the Urals, it certainly has not appeared on any market known to the author.) The Ceylon material is less flawed than that of Brazil. It is recovered from the gem gravels there and occurs in sizes from sand up to at least chunks of 60 carat size. Other locations for chrysoberyl are Rhodesia, South Africa; Tasmania and China. It is interesting to note that in Brazil chrysoberyl has been found with diamonds as well as with white topaz, while it has been reported that it occurs with emeralds in the Ural Mountains of Russia.

Chrysoberyl cat's-eyes are especially valuable when the material is alexandrite. This, a rare combination, is another stone missing in the author's collection. Most all cat's-eyes make fine rings and have long been popular in the jewelry trade. In fact, it is a good collection that includes a fine representative of this or any type of chrysoberyl.

Price of rough has not varied greatly over a period of years, but it is almost impossible to obtain at any price in large size. Speaking of size, the comparative value of all chrysoberyl is high because of the specific gravity. A small chrysoberyl will weigh much more than an emerald of the same size.

In choice of cut the chrysoberyl offers the entire field as it has been represented in practically every cut known to man. Naturally the cat's-eyes are cut in cabochon. In the faceted line, mixed cut, step cut, brilliant round and oval cuts are used. All to excellent effect.

In crystal form twinning and striations are common. It belongs to the orthorhombic system. Has a good luster going to silky in many cat's-eyes. Its hardness is 8½, according to authorities; however, the author has cut a few that seemed to be as hard as the average sapphire. It has an excellent ability to withstand shock on the wheel, probably because of its superior toughness. It does have a distinct cleavage. Refraction

is double with a very good rating of 1.74 to 1.75. The specific gravity is a very high 3.73. It is not attacked by acids. Identification of chrysoberyl is fairly easy, especially alexandrite. While alexandrite could be confused with andalusite, andalusite has no green dichroic color when observed in lamp light, candle, or low intensity electric light. As with all chrysoberyl, specific gravity is a more accurate test.

Some chrysoberyls resemble peridot in color and appearance but the refractive index, hardness, and SG are higher. Refractive index and SG separates the chrysoberyl cat's-eye from all other eye stones.

To determine natural chrysoberyl from synthetics, the refractometer is a definite test for synthetic spinel as it is singly refractive. For synthetic sapphire, the color is "wrong" to the eye as well as the usual tests.

Chrysoberyl makes excellent display pieces and the author's favorite cuts are oval and emerald for non-eye material. A medium high dome cabochon results in a very pleasing display of the eye in cat's-eyes.

Although the high dome is preferred by many, actually, the shape of the rough will, to a certain extent, predetermine the size and shape of the cab. One would not want to waste several carats of this fine material just to achieve a low-domed cabochon. Either a high dome or a low dome is quite acceptable but the medium high dome seems to define the eye to better advantage.

In cutting, care must be exercised to avoid the great number of flaws and visible inclusions so prominent in this material.

While cutting success may be obtained by any of several methods, the author uses the following:

Perform as usual, trying to hold as much weight as is consistent with good form. In fact, instead of performing right down to as near as possible, the author prefers to perform chrysoberyl in a rather loose manner, this does make the first faceting cuts of longer duration

but often a larger stone results than was thought possible with performing.

From the hand-held performing stage the stone is washed, dried, and dipped on the metal dop stick. When the wax is cool, the first stage of faceting is started. Only enough material is removed on the 400-grit bort, bronze lap, to assure an adequate table. This table is then retouched on a 1200-grit lap.

Then the stone wiped clean with alcohol and the polish process started. Linde A on a lead lap will give you a polish but this method is slow, sometimes touchy, and not recommended for large surfaces. Where cost of bort is a factor, Linde A may be used with success on small facets. The author prefers to use 6400 diamond compound on MDR "Special Sapphire" lap. This lap is a very hard metal lap, probably zinc base, and gives excellent results on all eight and over hardness materials.

On completion of table polishing, the facets are cut. Crown mains to 37° angle, pavilion mains to 42° angle. Naturally, the crown cuts are polished before starting on the pavilion. If the cut is emerald style, one or more extra facets, (four or five rows on the crown, instead of the normal three), will enhance the appearance and cut down the area to be polished at any one time. Be sure to hold the 37/42° angles for the mains. Some cutters prefer 40/40, but 37/42 seems to result in a more brilliant stone.

When the crown is completed, the stone is turned and the pavilion cut and polished. Chrysoberyl is faceted the same as any other material and requires no extra special handling. Polish will be achieved at the expense of longer time and effort than required for quartz. Control heat more closely than is necessary with quartz also. Anyone who has ever successfully faceted any stone can facet a chrysoberyl.

In cabochon cutting the usual grinding and sanding methods are used, followed by a good sanding on leather using fine loose grit.

A "final" sanding, resulting in a semi-polish, may be applied using 1200-grit

bort before going to the polish wheel. This method will cut the time necessary to achieve that high polish so dear to our hearts.

Polish of a very high quality is obtained using a groove in a maple lap, impregnated with 6400 diamond compound. The lap speed is very high in relation to ordinary polishing speeds. Great care must be exercised to refrain from melting the wax on the dop stick as heat is a constant problem when using this method.

Anyone having a favorite polishing method for cabochons of chrysoberyl is encouraged to write either a brief note to the author or to write a complete article for early publishing in *ROCKS AND MINERALS*. If only more of us would come forth and tell the rest of us the little tricks we often employ to achieve our excellent stones, it would be a boon to all and probably advance our hobby several years.

Do not be afraid of small sizes in rough. Several years ago five small roundish pieces averaging one carat each were obtained, two were traded, but the remaining three were cut into small but exceedingly excellent eye stones. Less than a quarter of the original weight was lost in the cutting process.

Chrysoberyl is one stone missing from the collection of the average amateur. Price is one consideration and availability of the rough is another. Most good rough is immediately snapped up by commercial cutters and is not to be found in the hands of the average supply man that caters to amateurs; however, good rough is available from time to time and a standing order with your favorite dealer should get results in time. Mr. Robert Winstead of Box 572, Ramona, California, may be able to supply your needs along these lines. Bob is generally considered as a wholesale dealer but he may be persuaded to ship you a small selection of choice rough. Incidentally, Bob has one of the finest mineral collections in these United States. His outstanding minerals of San Diego County has attracted nation-wide attention.

Colonel Barron of the Southern Gem and Mineral Company, (5241 Montaya Road, Upper Valley, El Paso, Texas), whose advertisements appear quite regularly in R&M, at one time, had a very fine stock of facet grade chrysoberyl. The Colonel has been in the game a good many years, and he is a recognized authority and fine gemologist. He stocks many items of interest for cutters, fine mineral specimens, and some of the best agate ever to come out of Old Mexico. An order to him might just bring you some fine chrysoberyl rough or even a faceted stone. Do not worry about quality as the Colonel will send you the grade you seek or tell you it is not available. The firm is entirely reliable.

By all means, promise yourself that you will add one of these fine gems to

your collection this year. A fine chrysoberyl, either cat's-eye or faceted, has a decided value and will enhance any general collection regardless of its size. Do not let the many references to high cost scare you as rough and cut stones may be obtained at from a few dollars to many hundreds of dollars. Naturally, you will not pay as much for rough as you would for a finished stone. Ask your dealer, and do add a chrysoberyl to the collection. For those who do no faceting, the author will endeavor to supply names of some individuals and firms known to have this gem available for either trade or purchase. But please, include a stamp. The last time such an offer was made the stamp purchases almost ruined the budget forever.

WORLD'S LARGEST URANIUM OPERATION

At Quirke Lake, Canada

BLIND RIVER, ONTARIO—This remote, rugged, ore-rich region was the scene Sat., Sept. 21, 1957, of the official opening of the world's largest uranium operation at Quirke Lake, Ontario, Canada. Over 500 guests of Consolidated Denison Mines Limited, including high Canadian government officials, mining experts, and businessmen from both Canada and the United States, saw over 4000 tons of high-grade uranium ore being mined and processed—roughly 65 per cent of the rated daily capacity of the operation.

Three hundred and fifty of the guests came on two special overnight trains from Toronto, and arrived back in that city Sunday morning after a full day and evening at the mine and mill site. Among the guests was the Hon. Lester B. Pearson, former Minister for External Affairs, and present Member of Parliament from this district, who was the featured speaker at the dinner Saturday night.

Stephen B. Roman, president of Consolidated Denison, was host at the open-

ing, which began with a trip through the mine Saturday morning and included a tour of the processing mill in the afternoon. Formal opening ceremonies took place at a midday luncheon.

The Consolidated Denison property comprises approximately 22 square miles in the Blind River uranium mining area of Ontario. The orebody itself is 2½ miles long and about 1½ miles wide and has been estimated by the company to contain a minimum of 136,787,400 tons of ore grading 0.139 per cent uranium or 2.78 lbs. per ton. Consolidated Denison's orebody has a value of approximately \$4 billion at current prices and has a lifetime of over 60 years at a production rate of 6000 tons a day.

Consolidated Denison has contracts with the Canadian government to supply \$201,895,000 of uranium concentrates by March 31, 1963. Deliveries have already commenced and it is anticipated that the contract will be completed well in advance of 1963.

The company's orebody is reached by

two shafts about 2500 feet apart. The number one shaft was completed at a depth of 1856 feet early in 1956 and hoisting of ore was begun in August. The number two shaft, one of the largest openings of its kind in North America, was completed this summer.

Commercial operations were begun in June this year when the mill was sufficiently completed to commence processing the uranium ore. Initial production was at the rate of about 2000 tons daily. Recently it has averaged about 4000 tons daily, and it is expected that the rate will be up to 6000 tons a day by the end of the year.

The milling plant, which incorporates the latest techniques for economical recovery of U_3O_8 , was built under the supervision of R. M. Way & Co., Ltd., specialists in the design and construction of uranium mills. General contractors were B. Perini, Limited.

Modern, high-production mining techniques are employed by the company in mining the uranium ore. Mechanical loaders, for example, are used in loading shuttle cars. Trackless shuttle cars carry the ore to the main haulage system which in turn transports the ore on a continuous conveyer belt to the two shafts.

AN INTERESTING GEOLOGICAL PHENOMENON IN WESTCHESTER COUNTY, N. Y.

By DAVID B. SABINE

26 Vark St., Yonkers 1, N. Y.

For those who live in or near Westchester County, New York, there is a most interesting sight in the northeastern corner which is well worth a visit. Toward the end of the second glacial epoch, as the glacier was receding and

melting, a huge boulder which had become embedded in the ice at some distant spot was gently deposited on a ledge making a perfect three point landing. As can be seen from the illustration, three fingers thrust upward support this



The perched granite boulder near Route 121

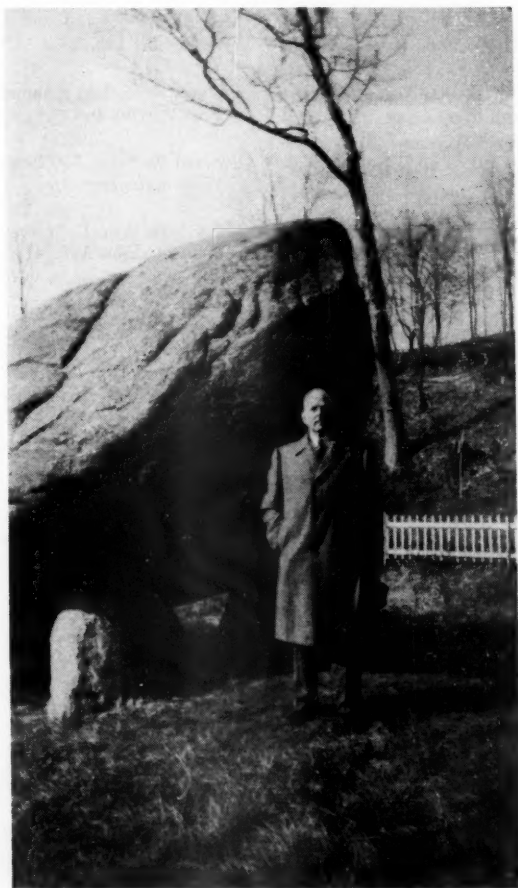
massive rock perfectly with room for a small child or animal to crawl under.

The boulder is of granite containing much pink feldspar and is about seven by seven by ten feet. One end rests on four and the other end on three outcroppings of limestone.

To reach this spot, follow route 22 northward from Kensico Dam till just north of Bedford where you turn right on Route 121. At Grant Corners, it is necessary to detour to the left on Route 124 because a bridge is out on Route 121. This takes you only about a mile

out of the way and very soon after you are back on Route 121, you come upon this boulder about twenty feet off the road on the right. It is easily seen from the road and you can't miss it as it is a breath-taking sight.

It's a beautiful ride through lovely country and is a rewarding trip. Unfortunately, the limestone shows marked signs of weathering and in another hundred thousand years it may give way entirely and tumble the boulder into the bed of the creek some thirty feet below.



Close up view of the granite boulder with the author, Mr. Sabine, standing alongside of it.

Collector's Corner

For the special benefit of collectors who may be living in areas far removed from other collectors we have opened this feature. In this corner, a collector may have his name and address listed for the purpose that other collectors may write him in the hope that through correspondence, exchange of ideas and specimens, new friendships may be formed. Listings are free.

R. E. Clisby,
128 Lake Park Blvd., Fairmont, Minn.

Jacqueline S. Levy (11 years),
23 Westminster Rd., Utica, N. Y.

Fred Hausler,
4967 N. 2nd St., Philadelphia 20, Pa.

Mrs. Robert Lawhead,
257 David St., Johnstown, Pa.

Larry James (12 yrs.), 5050 Cottonwood
Lane, Salt Lake City 17, Utah

Egbert McElroy,
Round Lake Road, Monroe, N. Y.

Paul F. Patchick,
958 Centinela Ave., Santa Monica,
Calif.

Mrs. Beulah Lehman,
187A S. Edwards, Bishop, Calif.

Marion Godshaw,
633-21st St., Santo Monica, Calif.

Rose Wey,
12526 So. Rose Ave., Downey, Calif.

H. J. Kendrick, Ophir,
San Miguel Co., Colo.

Theo. Kirschman,
Haswell, Colo.

Mrs. James F. Donohue,
411 Main St., East Hartford, Conn.

Walter Berg, Jr. (12 yrs.),
31 Secord Dr., MacDill, A.F.B.,
Tampa, Fla.

Meade B. Norman,
1524 Mitchell Ave., Tallahassee, Fla.

Michael Dee,
231-24th Ave. No., St. Petersburg, Fla.

Fred Nelson,
2216 Elizabeth Ave., Zion, Ill.

Steven Sturm,
521 Roosevelt Ave., Kewanee, Ill.

Mrs. Maurice Lamb,
Niota, Ill.

Victor Felger, 126 Esmond St.,
Fort Wayne, Ind.

Edward Rushton, 730 Bexley Road,
West Lafayette, Ind.

Mr. & Mrs. Wm. E. Harvey,
6905 Madison Ave., Hammond, Ind.

Bill Prather, Box 131,
Great Bend, Kans.

Jimmy Henderson (13 yrs.),
1345 W. 10th St., Bogalusa, La.

M. H. O'Brien, 2927 Vandenberg Rd.,
Muskegon 36, Mich.

Mrs. Marion E. Hull,
704 Gratiot Ave., Saginaw, Mich.

Mrs. B. A. Heath,
Skandia, Mich.

Lee E. Payne, Route 1 (Eagle Lake),
Willmar, Minn.

Milton Wernecke,
1631 W. 5th St., Winona, Minn.

Lew Powell (12 yrs.),
Route 1, Dundee, Miss.

CWO Vernon R. Braun, 950406E.
Headquarters Squadron,
4061st Air Refueling Wing.
Malmstrom Air Force Base, Mont.

Charles Eggleston (10 yrs.),
908 Ave. E., Cozad, Nebr.

Philip Presley (16 yrs.),
110 N. Osborne Ave., Margate City, N. J.

Mrs. J. J. Tamburri,
Box 74, Morganville, N. J.

Edwin Skidmore,
253 Central Ave., Mountainside, N. J.

Leo A. Miller,
Blossvale, N. Y.

Eric Harnum (16 yrs.)
3335 Wallace Drive, Grand Island, N. Y.

John Fahey, Jr. (15 yrs.),
38 Barclay St., Albany 9, N. Y.

Harold Weiss, M.D.,
8002-19 Ave., Brooklyn 14, N. Y.

Mr. & Mrs. Walter Kowal,
RD2, Goshen, N. Y.

Nancy Simons (14 yrs.),
167 Main St., Amenia, N. Y.

Charlie Bennett, 210 W. Franklin St.,
Horseheads, N. Y.

Ernest Brill (11 yrs.),
2975 Ave. W., Brooklyn 29, N. Y.

John Wilson, 44 Van Cort. Pk. Ave.,
Yonkers 2, N. Y.

Bert Robinson (14 yrs.),
712 Crown St., Brooklyn 13, N. Y.

Joseph Jeski (13 yrs.),
676 Humboldt St., Brooklyn 22, N. Y.

Robert Pasca,
395 Sussex Rd., East Meadow, L. I., N. Y.

Harold J. Lienemann,
Box 42, Gouverneur, N. Y.

Alice Nicholson (14 yrs.),
3112 Eton Rd., Raleigh, N. C.

Maxine Megyesi, 155 E. Main St.,
South Amherst, Ohio

Eileen Philpott (16 yrs.),
2200 Wascana Ave., Lakewood 7, Ohio

Allison Cusick,
RD #1, Unionport, Ohio

Dick Dominik, 12209 Wayland Ave.,
Cleveland 11, Ohio

Rev. C. B. Howells,
1679 Parkwood Rd., Lakewood 7, Ohio

Tommy Kelley (11 yrs.),
528 S. 79 E. Ave, Tulsa, Okla.

Ronald Cibik (10 years),
427-3rd St., Leechburg, Pa.

Theresa Farnham, R. D. 2,
Cambridge Springs, Pa.

George R. Schortz, R. D. 1
Bethlehem, Pa.

Robert C. Smith, II,
920 Seneca St., Bethlehem, Pa.

Mrs. Ammon Schwartzbach,
2239 Logan St., Harrisburg, Pa.

Mrs. Tres Lawhead,
3936 W. Ridge Rd., Erie, Pa.

Edward Carey (11 yrs.),
200 Atwell Ave., Providence, R. I.

Mrs J. O. Blackwell,
R #5, Abilene, Texas

Walter Scott Gray, Jr., 417 Perry Ave.,
Denison, Tex.

Earl Medlin (16 yrs.).
1301 N. Oak, Mineral Wells, Texas

Gary Coen (14 yrs.),
3762 Valley Ridge, Dallas 20, Texas

P. M. Plimmer, Box 701, Alpine, Texas

G. W. Weber, 1320 Portland Ave.,
Willa Walla, Wash.

M. W. Anthony,
P. O. Box 260, Bellingham, Wash.

Lyle De Rusha, RR4,
Chippewa Falls, Wisc.

Earl C. Peterson,
New Lisbon, Wisc.

Mrs. Mary E. King,
Star Rt., Palmer, Alaska

Miss Carol Corns (16 yrs.), 365 Hillsdale
Ave. E., Toronto, Ont., Canada

Ernest Windisch, 1576 Desmarchais Blvd.
Montreal 20, Que., Canada

Lt. W. L. Hiss,
94 Green Lane, Padgate, Warrington,
Lancashire, England

FRANK DUNCAN FUND

In the July-Aug. 1957, R&M, p. 380, appeared a letter sent in by John S. Albanese, P. O. Box 221, Union, N. J., concerning the plight of Frank Duncan, of Terlingua, Texas, an aged mineral dealer who is up against it financially.

The letter made such a strong impression on George Bruce, President of the International Import Co., 604 Peachtree St. N.E., Atlanta 8, Ga., that he has started a Fund for the relief of Mr. Duncan.

This is a most worthy cause and we do hope and trust that at least \$500 will be raised by Dec. 15th so that the amount may be sent Mr. Duncan as a nice Christmas present. All who donate over \$1 to the Fund will be listed in R&M (unless they wish to remain anonymous.) We are very sure Mr. Duncan will be greatly touched and deeply grateful by this warm tribute to an old mineral dealer. Send all donations to ROCKS AND MINERALS, Peekskill, N.Y., and mark them "Frank Duncan Fund." Fund will close Dec. 15th, 1957—Editor.

Frank Duncan Fund

International Import Co. (George Bruce)	\$ 5.00
Rocks and Minerals	10.00
Women's Corner of R&M (Winnie Bourne)	5.00
John S. Albanese, Union, N. J.	10.00
Gem and Rock Shop, Jackson, Miss.	2.00
Donald Presher, Montrose, N. Y.	2.00
Edna D. Doughty, Westfield, N. J.	10.00
Ken Fowler, Bayard, Nebr.	2.00
Calvert Bastress, Amityville, N. Y.	25.00
Glen Royal, Jamaica, N. Y.	3.00
Fred Hayden, Jamaica, N. Y.	5.00
Bethora Comstock, Smithville Flats, N. Y.	2.50
Frank Waskey, Oakville, Wash.	5.00
Anonymous	9.00
Total to date	\$95.50

Club and Society Notes

Attention Secretaries—Please submit neat copies. Give dates and places of meetings. Check names for correct spelling.

East

Queens Mineral Society Field Trip Report French Creek, Pa.

May 4, 1957—

A small but enthusiastic group on a cool and cloudy day were transported in Dave Hammer's trusty automobile to the Brookes Iron & Copper Mine, St. Peters, Pa. The trip proved very pleasant because of the banter and horseplay. The distance traversed was about 130 miles each way. Plenty of material was collected thanks to Pete Revere and Barry Strauss who knew the right "caches". Each came home loaded down with plenty of calcite, pyrite, chalcopyrite, magnetite and byssolite. Lou Roth, one of the group, made some tests and claimed that the magnetite was as magnetic as a good magnet. Others in party suggested that Lou had inserted small pieces of Alnico in the magnetite. Lou also claimed that some of the calcite collected by him seemed to fluoresce red to purple both on long and short wave.

Limecrest Quarry, Sparta, N. J.

June 1, 1957—

Armed with a permit obtained well in advance, 15 members and guests braved a cloudy morning and travelling in 4 cars arrived at the quarry at about 11 A.M. By this time it was very sunny and hot. This quarry is in active operation and even on Saturday, there were many trucks running thru the property. A special parking space had been allocated for our group. Unfortunately a fine white dust covered everything and every vehicle in motion stirred up clouds of it. Sitting in a car with open windows proved an ordeal and most of the group except one, quickly departed for the pit, probably in self-defense. Those there for the first time were astounded at the size of the open pit. There was plenty of material on the dumps. The faces or sides of some of the steep cliffs looked dangerous for they were being actively worked by the company. The floor of the pit is level and smoothed down

hard with a white coating of powdered limestone. It was also quite dusty down in this pit and after some collecting, the group ate and wended their way slowly up the steep ramp to our cars. The group was both dusty and thirsty. The water canteens were soon drained and fortunately for us, the quarry had an automatic canteen and we soon filled ourselves up with good, cold "pop". We found the management and employees very friendly and cooperative. A foreman picked up our permit as we left. Not much material was collected but most of us took away calcite, graphite and bits of phlogopite mica. Altho we were on the lookout for spinel, none was collected by any of us.

Franklin, N. J.

June 1, 1957—

Within a few miles from Sparta are the world-famous Franklin Dumps. Within minutes after we left Limecrest, we were there. We were joined by good old Vic Pribil and the Police Chief. Vic was there to collect fluorescent material for trading purposes but the Chief was out to "protect" all those under 21 from mortal injuries. A newly arrived group from Connecticut were chased when a child of one of the party had taken a few steps up the dump. The Chief was so loud in his condemnation of all sundry that he finally wanted to know what our group was doing there. He insisted on seeing a permit under his signature. When told that we had such a permit, he still wanted to see it. He even examined his signature closely. Once, a certain member of our group engaged the Chief in a long talk, he turned out to be a real nice person. According to the Chief, there had been a death at the dumps and a broken leg within two years of our visit and he was naturally concerned with the safety of collectors and particularly, the children. In collecting at Franklin, it is now necessary to obtain a permit in advance from the Police Chief and to leave all youngsters at home. Plenty of excellent fluorescent material was collected and Lou Roth had along some fancy gadgets to test for fluorescence. He did it right in the trunk of his car. Vic took out about 400 pounds

of material and many others of our group, did almost as well. It turned out, however, that Lou was so busy testing specimens for the group that he neglected to pick some for himself. After he got home, he hid himself over to Ted Fredericks store and bought some fluorescent specimens! According to those who did the collecting on the premises, great quantities of excellent calcite, willemite, zincite and franklinite were lugged away in our cars. We all voted this a most successful trip and will visit the dumps again soon.

**Field Trip and Outdoor Meeting,
Strickland Quarry, Portland, Conn.**

June 23, 1957—

We picked an extremely warm day and the few who arrived at the dumps around noontime, found collecting quite poor and the weather awfully hot. Four cars ascended the very steep and rutty road that led to the first dump. The smart ones parked their cars down on the road. It was noted after a short while, that most of the group disappeared in the upland. These mysterious disappearances were soon solved. They were watching a group of local youngsters swimming in the upper abandoned quarry. It was said that at one point, the water was more than 200 feet deep. Mrs. Green upon seeing the cold and clear water decided to go in for a swim. How she did so without a bathing suit but using her husband's undershirt, was a marvel to behold. Paul Roth also came without a suit but fortunately found one cached away and put it on. The water was so inviting that some of us doffed our shoes and socks and cooled off our tired and hot feet. Oh yes, we collected some lepidolite, feldspar, mica and several specimens of fair tourmaline. Several found some managanapatite which fluoresced nicely. None of our group collected any montmorillonite, cookeite or uraninite altho we were on the lookout for them. As we were wending our way down to the state road, Ted Fredericks and party arrived from the Hamptons on Long Island via the Long Island Sound Ferry which plies between Port Jefferson to Bridgeport. Reluctantly, we left Ted and some of us vowed that the next time, we would go to Portland, we would take along our bathing suits.

David Hammer,
Chairman-Field Trip
Committee, Queens Mineral
Society, Richmond Hill, N.Y.

Fulton County Mineral Club

At the meeting held July 29 '57,

Bob Bedford and Lewis Valachovic reported on the progress being made in securing a lamp (black light). A report was made on the Gore Mt. trip, and a paper was read on the origin of the working of the mine. Lewis Valachovic reported on a field trip that he and Andrew Palmer took to Chester, Vermont on Sunday, July 28th, where they collected actinolite and talc. This is a prospective trip for the club. A report on a hematite (iron) mine near Northville was given by Bob Bedford—a possible field trip. Lewis Valachovic reported on the Lyndhurst, Ontario trip and a future trip to Willsboro for wollastonite.

Field trips "Do's and Don'ts"—otherwise known as good and bad manners—were discussed and explained by Andrew Palmer and Lewis Valachovic.

August 12 '57:—

We now have 24 members and one associate member.

Bob and Jim Kazimerski showed beautiful slides taken on field trips, which were much enjoyed by the group.

Samples of graphite were distributed to members as an introduction to a future field trip.

A field trip planned for Sunday, September 8th to the vicinity of Schuylerville. There the group were to visit a graphite mine; Lester Park, and Stark's Knob. Lester Park is a site for fossilized algae and Stark's Knob, a few miles north of Schuylerville, has an interesting history. Before the American Revolution, it was known as Northhumberland Plug from its locality and because it is a plug or rock core, all that remains of a dead volcano and the only one in the state. It figured during the Revolution in the Battle of Saratoga and from it General Stark directed some of the fighting. It is now state property.

Our meetings are regularly held in the Greek Orthodox Church, 70 Washington St., Gloversville, and the public is cordially invited to attend.

Catherine Streeter,
368 Bleecker St.,
Gloversville, N.Y.

Plan To Organize Litchfield County Mineral Club

A meeting to organize a Litchfield County Mineral Club and was held Thursday evening, Sept. 16th, 1957. Temporary Officers were elected as follows: Chairman, Charles R. Chidester, 79 Lorenzo St.; Secretary,

John A. Ryan, 280 New Litchfield St., both of Torrington, Conn.

A program committee including T. Testone, William Domonell, Dr. Clifford Joseph, and Mrs. Louise Bonvicini will report on possible projects and trips at the next meeting to be held Thursday, Oct. 3rd.

A field trip to the Canaan quarries will be made Sept. 22nd. Members from Unionville, Cornwall, Winsted, and Torrington attended the first meeting.

Anyone wishing to join this Club please get in touch with John A. Ryan, Sec., 280 New Litchfield St, Torrington, Conn.

The Connecticut Valley Mineral Club

The Connecticut Valley Mineral Club started its field trip season in May with a visit to Cheapside Quarry, an active trap-rock quarry at East Deerfield, Mass. Dr. B. M. Shaub, president of the Club, reviewed the geology of the area. Some nice datolite crystals were found. In the afternoon the Club visited the old Leverett Lead mines which are described in Leo Otis' book, "Minerals and Rocks of Springfield and Vicinity."

In June the Club dug quartz crystals from the dolomite rock at Fonda, New York. Many large and small, double terminated, clear crystals were found.

In July the Club prospected for gold along the Williams River at Gassetts, Vermont. Sluicing was the favorite method of recovery and was quite successful.

Peter Zodac, himself, attended the club trip to Mine Hill, Roxbury, Conn., in August. Those club members still digging after lunchtime were delighted to have a visit with the editor of **ROCKS AND MINERALS**. Siderite crystals were collected, also pyrite in pyritohedrons and distorted cubes.

Over the Labor Day weekend, Oxford County, Maine, was invaded by twenty-four club members who visited Harvard and Tamminen Quarries, climbed up to the Newry Mines, and collected at Mt. Mica and Bennett Quarries. Mr. Nestor Tamminen; Mr. Stanley Perham and Mrs. Howard Irish entertained the club with displays of their choice specimens, some of which they permitted to be taken back to the Connecticut Valley.

The spectacular find of the trip was a green gem tourmaline crystal, an inch and a quarter long and large as a lead pencil.

This was found at Mt. Mica by Everett Anderson of Hartford, Conn.

Lawrence W. Schoppee
Field Trip Chairman
9 Greenbrier Street
Springfield 8, Mass.

Mineralogical Society of Pennsylvania

August 1957, Field Trip, was taken Sunday the 18th to Summit, N. J., where, thru the kindness of the Houdaille Construction Materials Co. we visited their extensive quarry and in a large area of freshly blasted rock, 144 members and guests found ample space and opportunity to work and collect. The reward was many attractive specimens. The heulandites, amethysts, calcites, stilbites and prehnites, the latter in various forms and shades of green and yellow, were quite noteworthy. Outstanding were several specimens of heulandite, very beautiful, found by George Malloy. He found also some exceptional prehnites, banded agate etc. Mrs. Robert Smith of Bethlehem became the proud owner of a block of black trap rock (about 10 x 11 in.) containing an exposed vug of stunning amethysts probably the prize find of the day. Robert Eisenhower did right well in his prehnite-calcite-amethyst-heulandite finds. The Jennings family were agreeably rewarded for their usual active team-work. Robert exposed a vug of fine prehnite crystals, strangely, containing considerable water. David Evans obtained stilbites up to 2 inches in diameter. Bill and Irene Weaver were most pleased along with Mike Kidgus and many others with the quality of their finds, in fact every one seemed well satisfied with the place and its many possibilities. I heard no complaints, except that the rock was very, very hard, while that meant strenuous work the rewards were commensurate generally. The weather turned out to be excellent, as near perfection as one could ask, for our purposes.

Harry W. Trudell
Member Publicity Committee
1309 Highland Ave., Abington, Pa.

On Sunday the 15th of September, 128 members and guests of the Mineralogical Society of Pennsylvania, braved the hot weather and made a trip to the ever popular Wood's Chrome Mine.

Judging by the number of holes, pock

marking the dumps, everybody kept busy searching for some of the elusive specimens that have made this location famous. The size of the hole being dug by Jim Irvine started rumors that he was planning on opening a new mine.

Before the day was over most everybody was rewarded for their efforts with an assortment of specimens. Joe Kish uncovered a very large piece of Chromite, Forrest Lenker a nice piece of Chalcedony of cutting quality, Charlie Owens some very nice Brucite and Pauline Kintz finally outdid her husband by discovering some nice specimens of Hydro-magnesite.

Paul Seel brought along his microscope and gave everybody a chance to check their micro specimens right on the spot. A big vote of thanks to you, Paul, for the offer. A real nice idea. He also came away with a good specimen of micro Aragonite. Zarate, Deweylite, Magnesite, Picrolite and Kammererite were some of the other specimens located.

The Orners and the Donleys brought along some of their choice Cornwall specimens for us to see and drool over.

All in all a nice day, a pleasant trip and good collecting.

Wilford A. Beveridge
Publicity Committee
832 Main Street
Bethlehem, Penna.

South

Southern Appalachian Mineral Society Asheville, North Carolina

The Southern Appalachian Mineral Society will be host to the 8th annual convention and show of the Eastern Federation of Mineral and Lapidary Societies. The show will be held in the city auditorium of Asheville, N. C., August 7, 8, 9, 1958.

Asheville not only is well-located geographically for the member societies of the Eastern Federation, ranging from Maine to Florida, but it also is located in the heart of one of the nation's most diversified and highest quality gem and mineral areas. For this reason a record-breaking attendance is expected at the Asheville show next summer.

The following preliminary appointments have been made for the show: Robert R. Williams, Jr., general chairman, and Robert Campbell, co-chairman both of Asheville; arrangements, Mrs. Robert Williams and

Mrs. William Whitehouse, Asheville; commercial displays, Gerald Medd, Arden, N. C.; non-commercial displays, William Whitehouse, Asheville; treasurer, George Stahl, Weaverville, N. C.; publicity and advertising, Fred Allen, Lincolnton, N. C.; speakers, Dr. Martin Wadewitz, Asheville; convention program, Miss Martina Wadewitz, Asheville; field trips, Dick Lugar, Hazelwood, N. C.; special exhibits; Dr. James Parker, Asheville, and William Merritt, Jr., Mt. Airy, N. C.

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Mid-West

St. Louis Mineral & Gem Society

"Diamonds—Their Origin and History," is the subject of a lecture to be given by Otto Kortkamp, certified gemologist, before the members of the St. Louis Mineral and Gem Society at their meeting, November 1, 1957, 7:30 P.M., which will be held in the auditorium of the St. Louis County Public Library, 6814 Natural Bridge Road, St. Louis, Mo.

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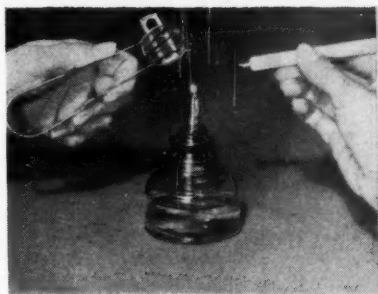
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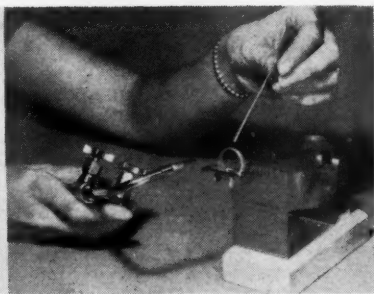
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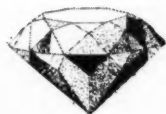
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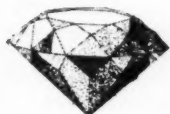
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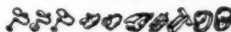
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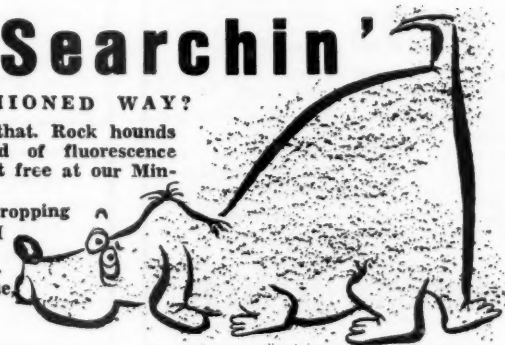
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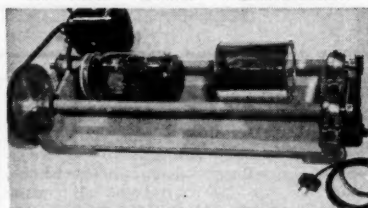


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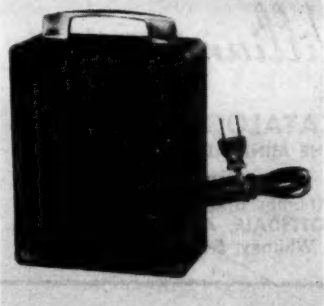
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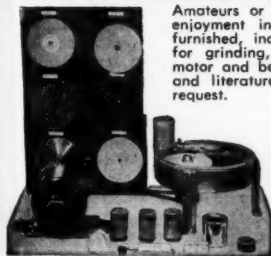
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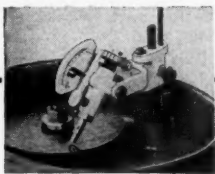
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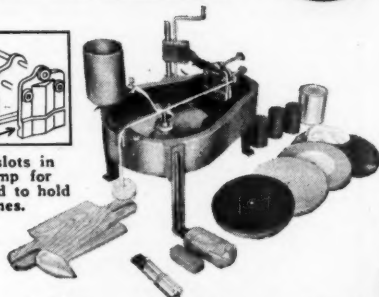
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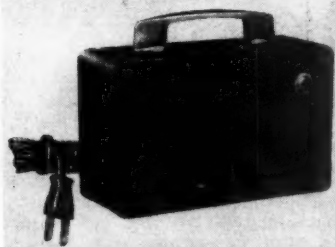
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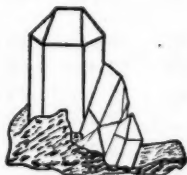
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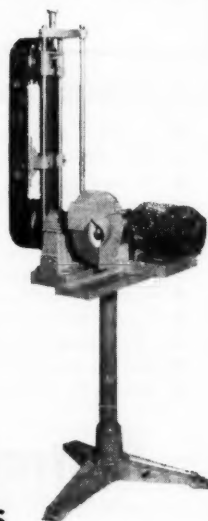
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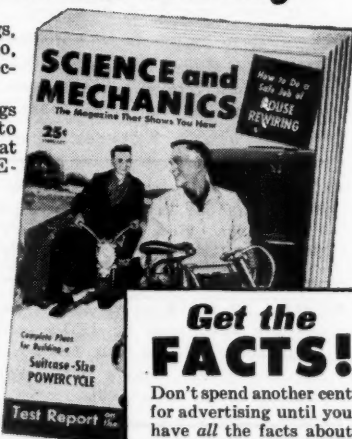
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EXCHANGES

AFTER 45 YEARS OF MINERAL COLLECTING a number of duplicates have accumulated. Many rare species and others are available for exchange. I should like to correspond with other advanced collectors both here and abroad. No polishing materials wanted. Gunnar Bjareby, 147 Worthington St., Boston 15, Mass.

EXCHANGE: Fossils, mainly brachiopods, from Pennsylvania, Mississippian and Devonian ages of Iowa, for minerals or fossils from other states. Amel Priest, Peru, Iowa.

EXCHANGE — Copper arsenates and other rare xld minerals. Foreign minerals wanted. No cutting material. John Parnau, 1342 N. Lincoln St., Stockton, Calif.

EXCHANGE — Your surplus specimens for Photo Equipment, Tape Recorders, Hi-Fi Equipment or Binoculars. Wack Sales Co., Inc., 3131 West North Avenue, Milwaukee 8, Wis.

MINERALS TO TRADE — For Lincoln cents, or will pay \$2.00 each for 1931-S cents and \$10.00 each for 1907-S cents. Also pay \$20.00 each for 1916-D Mercury dimes. Write A. Hegel, Box 959, Indio, Calif.

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EXCHANGE—Xld specimens. Prefer small specimens 2" down to micro size. No lapidary material wanted. Lu Watters, Box 88, Cotati, Calif.

FOSSILS

15 CLASSIFIED FOSSILS, \$2.00; 50 classified, \$7.50; 20 classified Texas minerals, some crystal forms, \$2.50. Mammoth teeth, large fossil bone, write. Leather mounted Longhorns, appx. 30", \$20.00 set. Pioneer Museum, Burnet, Texas.

I AM BREAKING UP A FINE COLLECTION OF FOSSILS — including rare trilobites, dinosaur bones, Alberta, Canada, jaws with teeth from So. Dak. Bad Lands, large snails and clams, ferns from Grundy Co., Ill. Shark teeth, etc. N. E. Carter, Elkhorn, Wis.

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FOSSIL BARNACLES — Best grade, good color, brighter, clusters or singles, 50¢ each. Second grade, trace of color, little or no color, 35¢ each. Fifteen shells from Philippines, \$2.50 p.p. Thirty tumbled, different gem stones, \$2.00 p.p. Southeastern Mineral Co., Box 2537, Lakeland, Fla.

CRETACEOUS CEPHALOPOD COLLECTION. Twelve larger classified specimens, all different, including Hamites, Turritites, Scaphites, Nautilus and Ammonoidea . . . Plus three complete, large Texas Ammonites. Fifteen fine specimens. All for only \$10.00 postpaid. FOSSILS UNLIMITED, 2905 McKinley St., Fort Worth 6, Texas.

FOSSILS

BOMBED IN ROCK COLLECTION. Classified Texas fossils selected for their unusual and interesting forms, specimens in matrix, some displaying two or more different species or phyla. Fine for classroom, museum nature classes, rockshops, etc. \$3.00 for fifteen, \$5.00 for thirty, or \$15.00 for 100. Postpaid. FOSSILS UNLIMITED, 2905 McKinley St., Fort Worth 6, Texas.

ARE FOSSIL PLANTS. Twelve classified plant and wood fossils, all different. Finely preserved specimens from lower Cretaceous. \$3.00 postpaid. FOSSILS UNLIMITED, 2905 McKinley St., Fort Worth 6, Texas.

TEXAS FOSSILS. Collection of twenty-five classified fossils including Brachiopoda, Echinoidea, Ammonoidea, Gastropoda, Mollusca, Coral, Plant and others. Our special only \$3.00 postpaid. FOSSILS UNLIMITED, 2905 McKinley St., Fort Worth 6, Texas.

SHARK TEETH — Miocene fossils from California. Teeth over 1 inch, 50¢. Over 2 inches, \$1.00. Assorted collection, \$10.00. E. L. Anderson, Granite Station, Bakersfield, California

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10 POLISHED GEM SPECIMENS — Including aventurine, garnet, amethyst, unakite and 16 others, identified and mounted in attractive box. BEGINNERS' SPECIAL, \$1 postpaid. Visitors welcome. Willard Olsen. New Port Richey, Florida.

ADVANCED COLLECTORS, ATTENTION: One of the largest collections of rare and unusual gems is now available and correspondence concerning your needs is invited. A few of these stones are: Alexandrites, Andalucites, Andradites, Blue Apatites, Brazilianites, Demantoid Garnets, Diopsides, Enstatites, Kornerupines, Kyanites, Phenacites, Pollucites, Rhodochrosites, Scapolite Cat's-eyes, Scheelites, Sinhalites, Sphalerites, Sphenes, Zincites, etc. For additional information, please refer to our other classified ad. International Import Company, 604 Peachtree Street, N. E. Atlanta 8, Georgia.

ATOMIC COLORED QUARTZ GEMS. THREE different faceted stones colored by atomic rays for \$3.00 postpaid. Dealers write for prices R. Berry, 5040 Corby St., Omaha 4, Nebraska.

GEMSTONES IN THE ROUGH. This colorful collection contains 30 of the world's most treasured gems and semi-precious stones. Truly a collection that is displayed with pride. Included with the set is a world map that shows the areas where the gems are located. Also included is a chart listing hardness, specific gravity, crystal structure, and other information concerning the gems. \$4.00 postpaid. Ryzelite Minerals, Box 569, Boulder, Colorado.

OPALS, BRILLIANT COLORS—Direct from mine, 15 for \$5.00. 10 ringsize cabochons (opal, amethyst, onyx, etc.) \$5.00. Pekay, Sanmiguel d'Allende, Guanajuato, Mexico.

"JAPURA JEWEL" the world's most beautiful gemstone, synthetic Spinel. Heat treated to 8⁺. Imported from West Germany. Round brilliant cut 4 M/M to 12 M/M. "Secor's," Bradenton Beach, Fla.

STRICTLY WHOLESALE — We offer one of the largest stocks of cut stones, faceting, cabochon and tumbling gem materials in the trade. We specialize on "Inca Rose" rhodochrosite, greened amethyst, chatham emerald, "Phantom" amethyst and blue star quartz cabochons. Confidential price list sent on request only if proof of dealership and resale permit number are included. Gilbert W. Wilhers, 1405 W. Paces Ferry Rd., N.W., Atlanta 5, Georgia.

COLLECTORS, HOBBYISTS: A. G. Parser, Inc., has many fine imported gems, rough, specimens, cutting materials. Ask for price list. Hard-to-get items always found at A. G. Parser, Inc., 54 West 46th St., New York 36, N. Y.

METEORITES

METEORITES! VISITORS FROM SPACE — For research, lectures and demonstrations, \$1.00, \$3.00, \$6.00. 2 lb. meteorite, \$18.00. Meteorite impacts, 2 specimens and sparks from a celestial bomb, \$1.00. Uranium ore and fluorescent, 10 specimens for \$1.00. Scientific Laboratory, 2846 Oakley Ave., Baltimore 15, Md.

MINERALS

HERKIMER & ARKANSAS "DIAMONDS" — Red garnets, golden apatites, tourmalines, selenites, 7 for \$1.00. Ellenville crystal clusters, 25c up. Fluorescent rainbow rocks, 40c lb.—2 lbs. free with each Mineralight (postage). Monroe Mineral Store, Round Lake Road, Monroe, N. Y.

MINERALS

GET THAT CHRISTMAS PRESENT NOW — Santa has a nice selection of Warsaw Geodes, fluorite and associate minerals. Order early from H. E. Chelf, 131 Terrace View Lane, Peoria, Illinois.

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will contact you with collectors all over the country.

Try an ad—only 10¢ a word.

TRI-STATE MINERALS — Wholesale, come pick them out. Multicolored glass slag at \$25 per hundred. While here, collect on the dumps. Also, cutting material. Boodle Lane, two miles west of Galena, Kansas, Highway 66.

EBONY STONE — A new black-to-chocolate-brown Ohio material. Will polish. 3 pieces, 1½ to 2", \$1.00; 2 pieces, 3", \$1.00; 1 piece, 4", \$1.00 postpaid. Refund if returned. Albert V. Topper, R. 2, Uniontown, Ohio.

QUESTION! What present to Boy, Girl, Chum or yourself will bring more pleasure than an Alaskan nugget of gold or platinum? Selected specimens of gold, three dollars to twelve dollars. Unusual platinum nuggets either smooth or rough, five dollars to fifty dollars. Beautiful tiny gold nuggets, three to five in number, weight of lot, fifteen grains troy, or more, two dollars. One to four platinum tinies, very attractive, weight of lot, six grains troy or more, two dollars. If not pleased; and I mean pleased; return shipment and all costs will be refunded. Frank H. Waskey, Oakville, Washington.

JASPER—Top quality brecciated type in lavender, reds, browns, etc. Rough 75¢, slabs \$1.50, baroque \$7.00 pound. Baroque all sizes, many can be re-cut to cabochons, etc. Dealer inquiries invited. Send \$1.00 plus postage for reasonable sample. R. D. Tweedie, 5643 Lone Pine Road, Sebastopol, Calif.

Scott's Rose Quartz Co. — Rose Quartz — also Black Hills Rock Specimens of many kinds and colors, for Rock Gardens, Cabinets, etc. Boxes 24 Rock Specimens—\$1.25; 18—90¢; 15—55¢; postpaid. Send 3¢ stamp for Price List. 1020 Custer Ave., Custer, South Dakota.

FOR SALE — Smithsonite and other fine mineral specimens for sale. Write your wants to me. M. W. Wall, 24 Euston St., Brookline 46, Mass.

48 CRYSTALS AND MINERALS — Boxed, mounted, and identified, postpaid USA, \$2.00. Specimens average approx. 1". Irma Curry, 3127 Erla Way, Richmond, Calif.

WYOMING AGATE — Jade, jasper, jasp-agate, turritella, banded wood, Montana agate, Colorado dinny bone. Slabs on approval. Rawhide Rock Shop, South 85, Lusk, Wyo.

OREGON MINERALS—Two boxes, each with 21 big specimens. Includes agate, asbestos, coquina. Attractively boxed, identified. Each box \$2.00 postpaid. Roberta Jensen, 8709 S.W. 56th, Portland, Ore.

MARIPOSA RHODONITE — Gem quality beautiful rose pink with black psilomelane, good material at 50¢ per pound, in rough chunks only, from one lb. and up, right out of the mine. Postage or freight extra. John B. Guillemin, Box 31, Raymond, Calif.

NORTH CAROLINA MINERALS—Box quartz, most unusual and debated form, a must for every collection, 50¢ to \$10.00. Rutilized quartz, not gemmy but good specimens, 50¢ to \$. Lepidolite, 50¢ to \$5.00. Also collections on cards: 16 for \$1.50, 36 for \$3.00. Postage extra. Satisfaction guaranteed. Allison Rocks and Novelties, 1811 Cheek Road, Durham, N. C.

MISSOURI AGATE—Ozarkite, beautiful gem material composed of jasper, rhodonite, chalcedony and agate. Pastel shades of red, pink, brown cream, and gray. Nice rough material, 10 lbs. for \$5.00, postage extra. Beautiful colored pieces for tumbling, a cab in every piece, 10 lbs. \$5.00, postage extra. We guarantee nice colored material at a low price. Special price on 100-lb. lots. Rock and Gem Shop, 518 West Walnut St., Nevada, Mo.

TURQUOISE FOR SALE — Turquoise in the rough priced at from \$5 to \$50 a pound. Royal Blue Mines Co., Box 646, Tonopah, Nevada.

14 THUMBNAIL MINERALS — Mounted and identified by school teacher for children and beginners. Only 25¢ each. Special prices to classes. Mrs. Emily Bettey, 240 Spring, Winchendon, Mass.

MINERALS

MAINE TOURMALINE — Rare specimens of pink and green Tourmaline in matrix from Oxford County, Maine—50¢ to \$10.00. We can better serve you if you state price you wish to pay, and your preference as to size, color, or crystal formation. Money-back guarantee. Yankee Gems, 20 Summit Ave., Wollaston 70, Mass.

SHATTUCKITE, WULFENITE, VANADINITE — And many other minerals from So. Dakota Black Hills and Arizona. Write for list. Allen's, 322 W. 23rd St., So. Sioux City, Nebr.

LIST FOR STAMP. CALIFORNIA FINE GOLD IN ROCK. Sample, 35¢; larger, 75¢; \$1.50 lb., postpaid. GOLD, 5330 College, Oakland, California.

BRILLIANT SHOWY SPECIMEN—Chalcopryrite on Pink Dolomite, or bright Blue-Green Chrysocolla—2x2—\$1.50 each. Postpaid. Satisfaction guaranteed. Ultra-Violet Mineral Lights. Estwing Picks, Diamond Saws, Fluorescent Minerals. Lapidary Equipment, Mineral Specimens, Geiger Counters and Books. Write or call, we are open every day and evening all year. Lost Cave Mineral Shop, Hellertown, Pa.

QUARTZ CRYSTAL—Unusual groups and doubly terminated crystals. Extra fine specimens. On approval. Claude A. Smith, Box 291, Geneva, N. Y.

BARGAIN SPECIALS. Send Dollar Bill for any one of the following: 1 rare Brazilian PHENACITE clear XI, 3 Howlite nodules, 2 fine pink Chalcedony roses or approx. 6 sq. inches dinosaur/whale bone or 9 tumbled gems from S. Australia. State preference. B. Lapidary, 13814 Ventura Blvd., Sherman Oaks, Calif.

TRI-STATE MINERALS — Fluorescents, fossils, slabs. Send for list. Try me once and we will be friends. Everett, 2941 No. 65th St., Lincoln 5, Nebraska.

ATTENTION ADVERTISERS — When figuring cost of a classified ad, be sure to include your name and address.

MINNESOTA THOMSONITES — Beautiful polished nodules of red, pink, white, and green eyes. Some with one eye, some with several. Sizes 1/4" and up. prices 25c and up. Write for approval asst. Maynard Green, Grand Meadow, Minn.

GIVE COLORFUL MINERALS FOR CHRISTMAS— One each of these attractive Mexican minerals: Brilliant yellow Sulphur xls, Bright blue Aurichalcite, and sparkling Pyrite xls. \$2.25 postpaid. Robert Eaton, 54 Heberle Rd., Rochester 9, N. Y.

FIRE-AGATES. Now by the lb. Field run, \$1.50 lb.; selected, \$3.00 lb. Minimum order 2 lbs. Please add postage. B. & H. Rock Shop, 29 Cherry Lane, Granbury, Texas.

PLATINUM NUGGETS: Five to twenty grains Troy. Thirty-three cents a grain, postpaid. Selected Micro mounts, two for One Dollar, Frank H. Waskey, Oakville, Washington.

ALBITE, chock full of spectacular Crystals of Hornblende and mottled with flakes of Moss Green Epidote. A Graphic Picture Rock from Western Alaska. Slices three-sixteenth inches in thickness, ten cents per square inch postpaid for ten inches or more. Three-eighths of an inch thick slabs twenty cents per square inch for ten inches or more. Something new that you will show with pride and your friends will study and admire. Frank H. Waskey, Oakville, Washington.

We have red, black and plume agates! Many colors and designs of moss agate! Pink and blue banded agate! All for sale at our ranch near Alpine, Texas. J. A. Anderson, Box 182, Alpine, Texas.

Tri-State Minerals: bulk ores, cleavages. Wholesale. One mile west of Galena, Kansas, Highway 66. Boodle Lane Minerals, Box 311, Galena, Kansas. (Correspondence to Lois Faye Lane, Prop.)

FINEST (OLD MOULTON, TEXAS) AGATIZED AND OPALIZED — Mostly agatized wood, \$5.00 for 8 lbs. Good cutting rough. This is not mine run. Selected cutting slabs 20c sq. in. Minimum \$1.00. For \$5.00, receive a bargain selection, at least 30 sq. in. You pay postage. Edward Helpenstell, 1429 Sandpiper Dr., Bellaire, Texas.

MINERALS

NORTHERN ORES & MINERALS: CABINET SIZE

\$1.00 to \$3.00. Cobalt, Native Copper, Hematite, Geothite, Galena, Sphalerite, Thomsonite postpaid. Lyle De Rusha, R. 4. Chippewa Falls, Wis.

IS YOUR FLUORESCENT collection complete? A

2x3" specimen from the following list, \$1.00; 3 for \$2.50; postpaid: willemite-calcite (red-green), pectolite (yellow), benitoite (blue), agate (green), halite (red) quartz (yellow), hydrozincite (blue), scheelite (yellow). Any of the following for \$2.00 each: calcium-larsenite (yellow), clinohedrite (orange), opal (green), aragonite crystals (green). Galen Rowell, 1001 Miller, Berkeley, Calif.

WITHERITE (ILLINOIS)—Beautiful specimens. 50g, \$1.00 and up to \$5.00 each. Ricolite (New Mexico), 60g lb. **BRENTWOOD LAPIDARY & GEM SHOP**, 8913 White Avenue, St. Louis 17, Missouri. Telephone: Woodland 2-4067.

COMPARE THESE PRICES — \$3.00 oz., 2 oz. for \$5.00; Rhodochrosite, \$3.00 and \$4.00 lb., aventurine, \$2.75 lb.; golden tigereye, \$1.00 lb.; blue and multicolored tigereye, \$3.00 lb.; unakite, \$1.25 lb.; dark tumbling and cabochon amethyst, \$3.50 lb.; citrine cabochon and tumbling, 15g gram; India moonstone, \$1.00 oz.; faceting smoky quartz, \$3.50 1/2 lb.; sodalite, \$3.50 lb.; sunstone, \$3.50 lb.; slabbed material available. Postage and tax extra. Stone Mountain Lapidary, 1788 Willivee Drive, Decatur, Georgia.

ULEXITE, CALIF. — 15c, 30c, 40c, 50c; Scheelite, Spain: 3/4" x 3/4" 35c; Grossularite garnets, Mexico: 15c, 30c, 45c; Corundum in chlorite, North Carolina: 40c; Perlite, Nevada: 40c; Allanite, North Carolina: 20c, 40c; Kaolinite, Colorado: 35c, 50c; Chrysotile asbestos, Arizona: 75c, \$1.00; Scheelite in quartz, Montana: 25c, 35c, 40c, 60c. Peters Rocks and Minerals, 1031 East Colfax Ave., Denver 18, Colorado.

GREEN GARNETS FROM MEXICO. While they last, a full pound of green garnet crystal specimens from Mexico for \$3.00 postpaid. R. Berry, 5040 Corby St., Omaha 4, Nebraska.

SELECT-YOUR-CHRISTMAS MINERALS FROM OUR STOCK. Large variety of XI and massive specimen. Ask for free list. Continental Minerals, P.O. Box 1206, Anaconda, Montana.

SUPERB GOLDEN CALCITE XLS — from Missouri, average size about 3x2—\$2.00 each. Also nice Arkansas Quartz Xls, average size about 2x2—\$1.00 each. Crystal filled geodes from Iowa—\$1.00-\$4.00. Franklin Fluorescent material (high quality)—50g per lb. Postage please. **NORTH SHORE MINERALS**, 82 Nassau Road, Great Neck, N. Y.

QUALITY MUSEUM SPECIMENS — Up to Museum size, fluorescing brilliants, Brazilian rock crystals fashioned into pagodas, stars and other famous cuts. Geodes, cutting material, hundreds of polished agate specimens up to ten by twelve inches. Christmas is near. Stop! Make your own personal selections. Harvey R. Shull, 1516 South Market, Oskaloosa, Iowa.

LAKE SUPERIOR AGATE — Large supply graded in three sizes 1" to 2 1/2", \$3.00 lb. 3/4" to 1", \$2.00 lb. 3/4" and smaller for tumbling, \$1.50 lb., plus postage. Also polished cabinet specimens and rare species. Walt's Agate Shop, 1649 W. 5th St., Winona, Minn.

TURQUOISE \$1.00 OZ. — Chrysocolla 60g in., jasper, red, yellow 25g in., rhodonite 25g in., aventurine 35g in., buddstone 30g in., petrified wood 30g in., howlite 20g in., fire agate 50g to \$2.00 per nodule. Agate slabs, 15 inches of 5 different colors, \$2.50. Geodes-Houser beds 35g each. Return privilege, add tax & postage. No C.O.D.'s. John V. Kaiser, 1338 Oakdale Ave., El Cajon, Calif.

COLORFUL WASHINGTON WOOD — For cutting and tumbling, 80g lb. Beautiful polished tumbled wood, 10 for \$1.00 or \$3.00 a lb. All above ppd. Ellis Holloway, 705 N. 190th, Seattle 33, Wash.

IDAHO GEM SILLIMANITE — Choice, Christmas special \$3.00 ounce, two for \$5.00. State number of pieces you want per ounce. Rare Asotin Creek coffeewood, \$2.25 pound. Tumbled sagenite, 1 oz. to 6 oz. pieces, \$2.50 pound. Hand graded beach agates, rough \$1.75 lb.; brilliantly polished \$3.00 lb. Idaho star garnets \$10 pound. (Minimum order on sagenite and beach agates, 2 lbs.; garnets, 1/2 pound). All orders postpaid. J. L. Blalock, Hells Canyon Agate and Fossil Shop, 213 Sycamore St., Clarkston, Wash.

Minerals

CABINET SPECIMENS: Zincite, willemite, franklinite, tephroite, rhodonite, stilbite, prehnite, chabazite, heulandite, pyrite, chrysocolla, aurichalcite, brochantite, linarite, barnite, wulfenite, vanadinite, barite, wavelite, dumortierite, aragonite, sulphur, pyromorphite and lots more. Prices from 50¢ to \$5.00. CASPERSONS, Route #2, Box 377, Vero Beach, Florida.

CHOICE FLUORESCENT MINERALS: Banded and spectacular designs from old Franklin collections. From 50¢ to \$10.00. CASPERSONS, Route #2, Box 377, Vero Beach, Florida.

CRYSTAL COLLECTORS — Beginners, one partly transparent green Tourmaline crystal and one golden Topaz crystal—65¢. Advanced collectors, one green Tourmaline with gemmy areas and one inch-and-a-half Topaz crystal, gemmy but with fractures—\$2.35. Money-back guarantee. Yankee Gems, 20 Summit Ave., Wollaston 70, Mass.

RED VERMONT JASPER — From the Parrott & Wilcox quarry, only 1/2 ton left. 100 lbs. minimum order. Also have smaller amounts of tremolite, brucite, chondrodite, colophonite garnets, limonite, margarite, margarodite mica, black tourmaline, massive siderite from the Calais mine. Oolitic hematite, wollastonite, banded gneiss, topaz, emery, black dolomite, cyrtolite, hexagonite and others. Total 100 lbs. minimum order. Wilbur J. Elwell, 2 Duck St., Danbury, Conn.

MINERAL COLLECTORS ATTENTION: I have some new Massachusetts Chistolites in either chunk style, chunks with one or more sawed surfaces, and in slabs, some thin enough to be polished for transparencies. The price ranges from 50¢ on up to \$5.00 for exceptionally fine specimens. Send what you feel you want to pay and I will guarantee satisfaction or your money cheerfully refunded in full. Many other New England minerals on hand. I also produce copper forms for enameling, jewelry, trays and bowls. Write for list. Thurlow S. Wilkinson, 5 Dayton Place, Worcester 9, Mass.

Publications

SCIENCE MONTHLY—Mineralogy, science, philosophy, \$1.00 per year. **FLUORESCENCE**—Pamphlet with chart; clear explanation of fluorescence. Price, \$1.00. William C. Casperson, formerly Curator of Paterson Museum, Route #2, Box 377, Vero Beach, Florida.

SAND

START SAND COLLECTION—50 different sands, many States, nifty collection, 3 dr. envelopes. \$5.00 postpaid. Glen E. Kiser, Douglass, Kansas.

250 VARIETIES SAND, U. S. and Foreign. Want to trade for minerals, particularly 1-ns, not cutting stuff. Glen E. Kiser, Douglass, Kansas.

WISH TO CONTACT SAND COLLECTORS. Object — exchange sands. Happy to help beginners. Chas. R. Lamb, Sand Collector, Long Beach, Washington.

RHODOLITE GARNET SAND — Found over very limited area Western North Carolina. Striking, beautiful and novel. Distinguished from ordinary garnet sand by rarity, rhododendron or delicate rose-like color, gem transparency, brilliancy, freedom from microscopic inclusions and internal imperfections. Two oz., \$1.00 postpaid. Wm. E. Bacon, Sylva, North Carolina.

MISCELLANEOUS

ILLINOIS — Qwuitscherbelleraicken — Ever see schmagates? Rockhounds, lapidarists, paleobotanist, mineralogist, fossiliferous nuisance, collectors . . . Beginners, oldtimers, experienced buyers, onlookers — you are cordially invited — See our vast collection started 40 years ago. See what you buy. Come early — stay late. Seeing is believing. Findings, jewelry, baroques, cutting material, Indian relics, antiques, guns. Circular free. Heike's Casa Blanca, Wenona, Ill.

IN THE EARLY 1800'S — The true character of the mineral franklinite, long mistaken for magnetite, was discovered by the French chemist Berthier, who named it franklinite "in order to remind us that it was first found in a place to which the Americans have given the name of a great man." Still, franklinite was considered primarily an iron ore and attention of miners concentrated on the richer zincite. It wasn't until years later, with the invention of advanced mill techniques, that franklinite "came of age" as the primary ore of zinc in the district. NAVRATIL, RFD #2, Middleburg, New York.

MISCELLANEOUS

FREE LUCITE POLISHING LAP—When you purchase two or more of our Diamond charged cutting laps at \$12.50 each postpaid. Laps are pure copper with steel back, 6" diameter with hole for 1/2" shaft. These are machined dead flat and charged with 400, 800 or 1200 Diamond. We also make 4" Dia. Aluminum face plates threaded to fit all standard R.H. shafts at \$3.50 each postpaid. Write for free "Do it yourself" folder. Hobby Haven, 2031 Lincoln Ave., Evansville 14, Indiana. Phone GR 6-3534.

E'TAGA XMAS SPECIAL—Selected assortment of hand-picked slab and pieces of choice semi-precious gem material for your particular cutting. For quality and variety you receive value above price. This super app. 16 oz. packet mailed all U. S. for only \$5.00. Allow 6 days. You hobbyists and collectors tell us your wants, will quote promptly. All rock-hounds make E'TAGA your mail and contact headquarters. Phone WHitehall 6-5609, closed Saturdays. We are dazzled by the beauty and quality of new purchases and stocks to be distributed from this Texas facility. Hurry that order for seasonable purchases and other super values. Regret could not contact "TEXAS STATE FAIR," visitors. A Merry Xmas. Watch for next R&M. E'TAGA MINERALS. 919-A Hartsdale Dr., Dallas 11, Texas.

BAROQUE MIXTURE—Containing mostly Apache tears, amethyst, golden tigereye, snowflake obsidian, jasper, rhodonite, foreign and domestic agates. \$2.50 lb. Add 10% tax and postage. Satisfaction guaranteed. V. Brubaker, 5318 W. Ave. L-12, Lancaster, Calif.

CLEAR PLASTIC BOXES — For visible storing, handling and displaying of specimens. Ideal for Geologists, Mineralogists, Gemologists and collectors. Write for free list. Althor Products, 170 Bay 23 St., Brooklyn, N. Y.

REAL STONES FOR RINGS — Garnet, ruby, emerald, topaz, amethyst, lapis, moonstone, coral, moss agate, bloodstone, jade, sapphire, opal. Any one, \$1.00; twelve, \$10. Motiwala, Third Bhoiwada 38, RM, Bombay 2, India.

MAKE ME AN OFFER FOR KING SIZE SPECIMEN 70-pound copper boulder from Michigan's famous Ontonogan County, where historic 3-ton boulder was found. Will ship prepaid. Henry A. Scheafer, 5140 W. Fletcher St., Chicago 41, Ill.

STAMPS WANTED: Advanced collection adamite, endlichite, plattnerite, barthite, jade, amethyst, dozens others; xls and gems; rare foreign specimens. Want U. S., foreign stamps. D. S. Fraser, 26 Peppertree, Portuguese Bend, Calif.

SENT ON APPROVAL — Disc-type cabs made especially for Ear screws, Cuff links, Pendants, etc. Many sizes and types. Bank reference required unless dealer or club member. No list. Clay Ledbetter, Stonecraft, 2126 McKenzie Avenue, Waco, Texas.

DIAMOND POWDER—In all grits will be offered in the next issue of this magazine. Be sure to see our large advertisement: A. G. Parser, Incorporated, 54 West 46 Street, New York 36, N. Y.

A. G. PARSER, INCORPORATED, Wishes all their friends and patrons a very joyous Christmas and a Most Happy and Prosperous New Year. We wish to thank our many patrons and friends for all their kindness during the past year for which we are very grateful.

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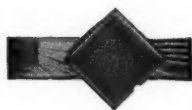
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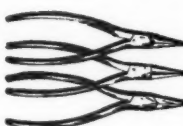


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